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UNITED STATES DEPARTMENT OF LABOR  
BUREAU OF LABOR STATISTICS

Vol. 30, No. 3

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MONTHLY  
LABOR REVIEW



SPECIAL FEATURES IN THIS ISSUE

Productivity of labor in eleven manufacturing industries,  
p. 1.

Causes of death, by occupation, p. 17.

Conference on migratory child labor, p. 69.

Maternity legislation for working women in foreign countries, p. 53.

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Legislative action on workmen's compensation, p. 65.

Labor turnover in American factories, p. 86.

## **NEW PUBLICATIONS OF THE BUREAU OF LABOR STATISTICS**

**Workmen's compensation legislation of the United States and Canada  
as of January 1, 1929.** Bulletin No. 496.

**Wages and hours of labor in the lumber industry in the United States,  
1928.** Bulletin No. 497.

**Wages and hours of labor in the boot and shoe industry, 1910 to 1928.**  
Bulletin No. 498.

**Building permits in the principal cities of the United States in 1928.**  
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**Wages and hours of labor in the motor-vehicle industry, 1928.** Bulletin  
No. 502.

**Wages and hours of labor in the men's clothing industry, 1911 to 1928.**  
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**Causes of death, by occupation.** Bulletin No. 507.

UNITED STATES DEPARTMENT OF LABOR  
JAMES J. DAVIS, Secretary  
BUREAU OF LABOR STATISTICS  
ETHELBERT STEWART, Commissioner

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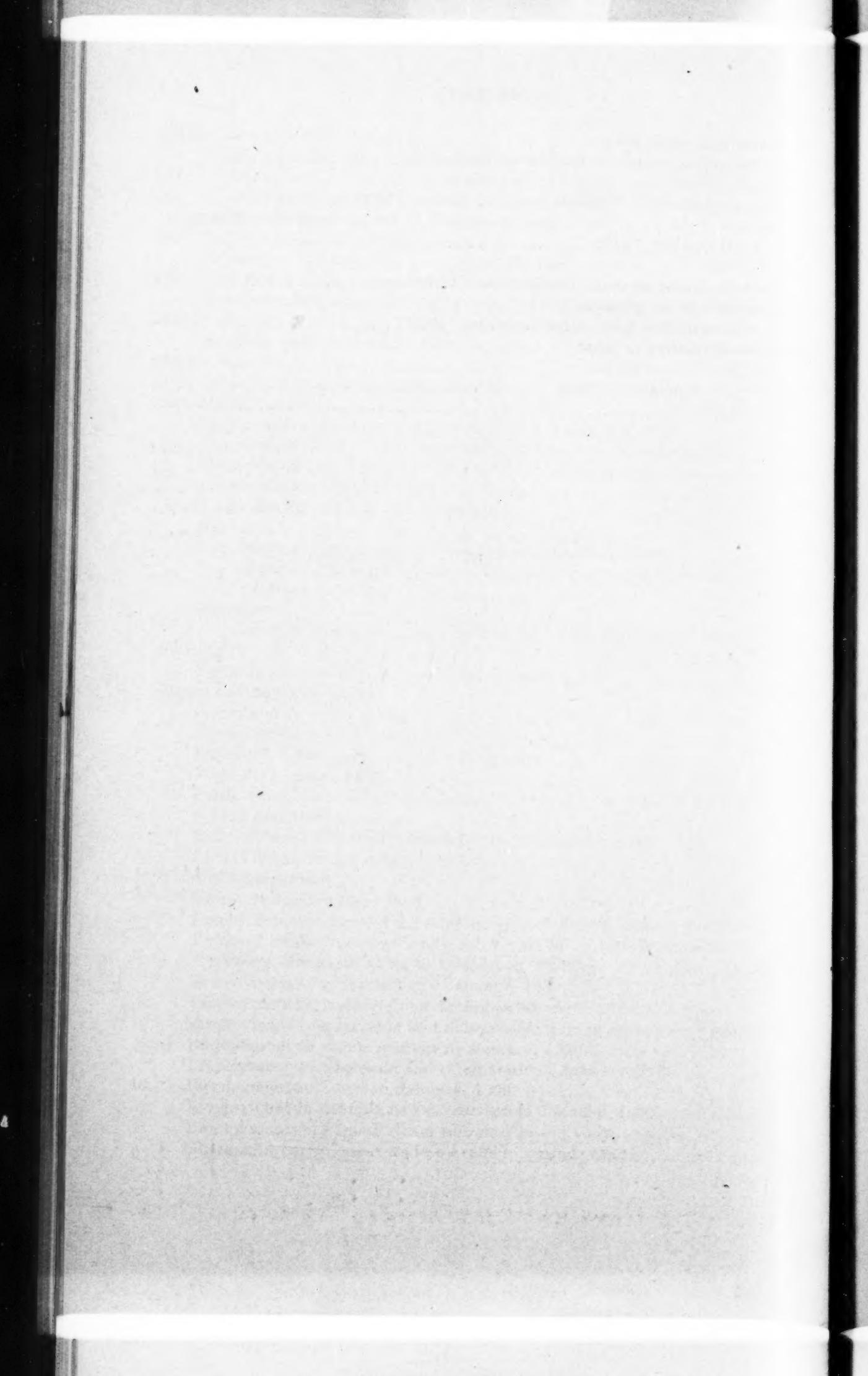
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## This Issue in Brief

*Man-hour productivity in 11 important manufacturing industries showed decided increases from 1914 to 1927, ranging from 24 per cent to 82 per cent for nine industries and reaching 178 and 292 per cent, respectively, for the automobile industry and the rubber-tire industry.* Page 1.

*An analysis of the causes of death among a large group of insured industrial workers brings out the effect of industrial employment upon the death rate and also shows the changes which have taken place in the principal causes of death over approximately a 10-year period. A comparison of the mortality rates of this group with men in the general population shows that between the ages of 25 and 65 the rates were much higher for the industrial group. A general downward trend is shown in mortality rates from almost every cause of death, the greatest improvement taking place in the death rate from tuberculosis of the respiratory system, which decreased 53.2 per cent between 1912 and 1923.* Page 17.

*The average full-time weekly earnings of employees of oil wells ranged from \$34.62 in Oklahoma to \$44.02 in California and of pipe-line employees from \$31.85 in the Gulf district of Texas to \$38.54 in California, according to a survey made by the Bureau of Labor Statistics in the spring and summer of 1929. The average full-time weekly hours of oil-well employees ranged from 48 to 69.9 while those of pipe-line employees ranged from 48 to 60.4, although in no State were the full-time hours actually worked, the proportion of full-time work ranging from 88 to 99.4 per cent in oil wells and from 86.6 to 98.5 per cent in pipe lines.* Page 109.

*The general belief as to the low-wage level of workers in limited-price chain stores was confirmed by a study by the United States Women's Bureau of wages and hours of labor of women employed in such stores. The median of the weekly earnings in 1928 was \$12, the medians for the various States ranging from \$8.80 to \$16. Some women earned less than \$5 in every locality but Georgia, Rhode Island, and South Carolina, while the highest earnings in a State ranged from less than \$12 in Mississippi to \$45 in Ohio.* Page 50.

*The 5-day week is in effect in one or more of the building trades in 97 cities and towns, according to information available to the Bureau of Labor Statistics, which, moreover, is believed to be only partially complete. A total of approximately 349,296 building-trades employees in these cities are on the shorter week, while in 17 of these cities all of the building trades are on the 5-day week basis.* Page 137.

*Periodic unemployment has occurred in Detroit for many years due to the fact that the principal industry of the city is the manufacture of automobiles—an industry with a highly seasonal demand. A survey of the unemployment situation in December, 1929, by a committee of city officials convinced the members of the committee that present*

methods utilized to alleviate unemployment such as the speeding-up of governmental construction or that of the railroads and public utilities, being temporary expedients, do not offer any solution of the problem in Detroit and that the final answer to the unemployment problem lies in measures to stabilize production, particularly in the automobile industry. Page 47.

*Stabilization of production and employment is secured by the Packard Motor Car Co. through the establishment of a monthly production figure based upon a carefully prepared estimate of what the year's production should be. Under this method the company equalizes production so that when demand is heavy it is met from the surplus produced in the periods when demand is less active. The business is operated, therefore, on a virtually uniform level throughout the year.* Page 49.

*Turnover and lost time were found to be greater in the spinning rooms of cotton mills than in other departments of the mills,* in a study made by the United States Women's Bureau in 1926. A recent study by that bureau designed to show whether or not temperature and other conditions of work led to the relatively unfavorable showing of spinning rooms was entirely inconclusive, as no consistent correlation could be found between the new and old methods of spinning or temperature and the absence and turnover figures in the different mills. Page 24.

*Migratory child labor was the subject of a conference held in Baltimore, Md., attended by representatives of four States—Delaware, Maryland, New Jersey, and Pennsylvania.* The problem was defined as being one both of school attendance and child welfare and of child labor, and it was shown that the number of children involved is not inconsiderable. The conference authorized the appointment of a joint legislative committee to draft uniform legislation dealing with migratory child labor and migratory children. Page 60.

*Continued improvement in industrial accident records is shown by the 1929 report of the Portland Cement Association.* Twenty-seven plants of the 151 reporting completed the year without a single lost-time accident, while three of them had operated over three years each without an accident. The extent of the improvement is shown by comparison with 1924, in which year there were 3,134 disabling accidents, including fatal cases, in 105 plants, while in 1929 there were only 828 such accidents in 151 plants. Page 67.

*Maternity legislation has been enacted in 41 countries,* according to a recent report of the International Labor Office. The draft convention adopted by the International Labor Conference in 1919 has had an obvious influence upon such legislation even in countries where the convention has not been ratified. The laws with few exceptions provide for compulsory rest, the rest period varying from 4 to 12 weeks in the different countries. Page 53.

# MONTHLY

# LABOR REVIEW

U. S. BUREAU OF LABOR STATISTICS

VOL. 30, NO. 3

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## Productivity of Labor in 11 Manufacturing Industries

**E**MPLOYMENT and production figures from the Census of Manufactures for 1927 have permitted the extension of the Bureau of Labor Statistics' index numbers of man-hour productivity in 11 manufacturing industries, to include 1926 and 1927. Recent information on former conditions has also afforded an opportunity for minor corrections in the figures published previously in the Labor Review.<sup>1</sup>

### Increases in Man-Hour Productivity of Labor

*Period 1925 to 1927.*—The new figures show that between 1925 and 1927 there was an increase in man-hour productivity in nine of the industries included, ranging from 1 per cent for the iron and steel industry to 12 per cent for the cement manufacturing industry.

The cane-sugar refining industry did not show any change in 1927 as compared with 1925, though a higher record in man-hour productivity had been established for 1926 than for 1925. The automobile industry, in which the man-hour productivity likewise was greater for 1926 than for 1925, also suffered a slight decrease in labor productivity in 1927 as compared with 1925. In both these industries the decreases from 1926 to 1927 were caused by decided declines in total production but with relatively smaller reductions in the average number of man-hours involved.

*Period 1914 to 1927.*—All of the 11 industries showed decided increases in man-hour productivity of labor between 1914 and 1927. These ranged from nearly 25 per cent for the boot and shoe industry to more than 290 per cent for the rubber-tire industry.

TABLE 1.—PER CENT OF INCREASE IN MAN-HOUR PRODUCTIVITY OF LABOR IN 11 MANUFACTURING INDUSTRIES, 1925 TO 1927 AND 1914 TO 1927

Industry	Per cent of increase	
	1927 com-pared with 1925	1927 com-pared with 1914
Iron and steel	1	55
Boots and shoes	8	24
Leather tanning	5	41
Slaughtering and meat-packing	4	26
Petroleum refining	2	82
Paper and pulp	10	40
Cement manufacturing	12	54
Automobiles	(*)	178
Rubber tires	11	292
Flour milling	11	.59
Cane-sugar refining	0	33

\* Decrease; less than 1 per cent.

<sup>1</sup> Issues of July, October, November, and December, 1926, and January, 1927.

*Period 1899 to 1927.*—In four of the industries it was possible to carry the index numbers back as far as 1899, and in three others as far as 1904. The index numbers for the census years earlier than 1914 are, however, only general approximations of the productivity situation and not so clearly representative of the actual conditions as the index numbers for the later years.

Among the four industries with index numbers reaching back to 1899, the iron and steel industry shows an advance in man-hour productivity of labor from that year to 1927 of 163 per cent, and the petroleum-refining industry shows an advance of 198 per cent. The leather-tanning industry shows a lesser increase, 52 per cent, and figures for the boot and shoe industry disclose that man-hour productivity of labor was the same in 1899 as in 1914, so that the increase from 1899 to 1927 was only the same as for the shorter period of 1914 to 1927, or 24 per cent.

*Period 1904 to 1927.*—In the three industries where the indexes for man-hour productivity of labor begin with the year 1904, it is found that between 1904 and 1927 the man-hour productivity increased 69 per cent in both the paper and pulp industry and in the flour-milling industry, and that in the automobile industry the enormous increase of 595 per cent is recorded.

Index numbers of man-hour productivity for each of the 11 industries are given in Table 2.

TABLE 2.—INDEX NUMBERS OF MAN-HOUR PRODUCTIVITY OF LABOR IN 11 MANUFACTURING INDUSTRIES, FOR SPECIFIED YEARS, 1899 TO 1927

[1914 = 100]

Year	Iron and steel			Boots and shoes	Leather tanning	Slaugh- tering and meat- packing	Pe- tro- leum refin- ing	Paper and pulp	Ce- ment manu- factur- ing	Auto- mobi- les	Rub- ber tires	Flour mill- ing	Cane- sugar refin- ing
	Indus- try as a whole	Blast fur- naces	Steel works and rolling mills										
1899.....	59	44	63	100	93	-----	61	-----	-----	-----	-----	-----	94
1904.....	69	59	70	108	92	-----	57	83	-----	40	-----	-----	92
1909.....	100	80	104	100	92	115	117	95	-----	35	-----	-----	-----
1914.....	100	100	100	100	100	100	100	100	100	100	100	100	100
1919.....	100	85	96	108	102	98	97	105	101	141	149	95	78
1921.....	87	106	85	111	130	113	114	95	123	190	198	118	83
1923.....	131	140	126	119	138	120	138	117	132	265	279	127	104
1924.....	130	156	123	115	135	125	165	121	132	258	338	139	117
1925.....	153	196	143	115	134	121	179	127	138	280	352	143	133
1926.....	157	204	149	115	134	127	169	136	144	302	366	154	140
1927.....	155	203	146	124	141	126	182	140	154	278	392	159	133

#### Method Used in Computation of Indexes of Productivity

IN OTHER indexes of productivity the number of workers in the industry has been used without regard to the number of hours worked by them, making the measurement of productivity merely output per worker.

In this study the progress of industrial production has been measured by man-hour output in preference to output per worker. There have been material changes in the daily or weekly working hours from time to time, such as the reduction from the 12-hour day to the 8-hour day in the iron and steel industry in 1923, so that a worker is not a

fixed unit of measurement from one year to another. A man-hour, however, remains a constant and unvarying unit at all times, and can therefore be used as a consistent measurement for all periods.

The indexes here given take no account of the causes of changes in output per man-hour. The term "man-hour productivity of labor" must not be confused with the term "labor efficiency," and the changes shown should not be attributed solely to the increased productive ability or capacity of the workers. Although that factor has, without doubt, played an important part in the higher productivity, many other factors are also involved, such as application of mechanical power, improvements in machinery, processes, or management, and elimination of waste, any one of which, or any combination of which, might effect changes in an industry. The index numbers merely show that changes have taken place, and to what extent; they do not point out the origin of the changes.

*Index numbers of man-hours of labor.*—The average number of persons engaged in each industry, including all salaried and supervisory employees, was obtained from the United States Census of Manufactures for the census years 1899 to 1927. An index of employment was constructed from these data, establishing the trend of average employment for the industry, using 1914 (the latest pre-war census year) as the base. As it was also desirable to show the relative employment during some of the recent years not covered by the census, the employment indexes of the Bureau of Labor Statistics for manufacturing industries<sup>2</sup> were used to bridge the gaps.

The prevailing weekly hours of labor in each industry were likewise obtained from the United States Census of Manufactures for the census years of the period, as far as available, supplemented by data from special studies of wages and hours in the industries by the Bureau of Labor Statistics, or from information on hours published in the Survey of Current Business.<sup>3</sup> An index of average hours for the industry, also on the 1914 base, was prepared from such data, covering actual hours per week, when possible, but otherwise prevailing full-time hours per week.

The index numbers of employment (persons employed) were multiplied by the index numbers of weekly working hours, to form an index of average man-hours for the industry, establishing the trend with as great a degree of accuracy as the existing data permit.

*Index numbers of production.*—Data as to the annual output for each industry were obtained chiefly from the United States Census of Manufactures, though it was found advisable to use other sources for the automobile industry<sup>4</sup> and the cement manufacturing industry.<sup>5</sup> An index of physical output, or production, was prepared from such data (again using 1914 as base), thus establishing the trend of production.

Very few industries produce only a single uniform commodity, or have a common unit of measurement which can be applied to the varied products. In most of the industries here covered it was necessary to measure the production of the entire industry by means

<sup>2</sup>See *Labor Review*, February, 1929, pp. 117-121.

<sup>3</sup>U. S. Department of Commerce. *Survey of Current Business* (monthly).

<sup>4</sup>National Automobile Chamber of Commerce pamphlets: *Facts and Figures of the Automobile Industry* (annually).

<sup>5</sup>U. S. Department of Commerce, Bureau of Mines. *Mineral Resources of the United States* (annually).

of its key product, or to weight the various important products of the industry (before combining them), according to the special conditions of manufacture, and to calculate the production index numbers from adjusted production figures.

It was also necessary to interpolate the production for the non-census years of 1924 and 1926 through the application of continuous production data from other sources, such as industrial associations, adjusted to the census figures.

*Indexes of man-hour productivity.*—The final step consisted in dividing the index numbers of production for the industry by the index numbers of man-hours worked, resulting in an index of productivity which expresses the relative increase or decrease in man-hour output in specified years as compared with the man-hour output in 1914.

The productivity index numbers do not afford any comparison of the actual output of any industry in the various years, as this depends greatly on the total number of persons engaged in the industry and the number of hours worked by them. Also, it is to be remembered that the indexes are merely relative figures and do not indicate the actual amount of production per man-hour in any industry.

#### Index Numbers for Individual Industries

THE 11 industries for which indexes of man-hour productivity have been constructed were selected solely because the necessary statistical data on employment, hours, and productivity were available in satisfactory form.

While they cover a wide range of industrial conditions, they can not be considered representative of the entire manufacturing field.

Direct comparisons, based on these index numbers, should not be made without considering other elements that might influence the trend of labor productivity. Very great increases in man-hour productivity were, for example, experienced in the automobile industry and the rubber-tire industry, while in the boot and shoe industry and the slaughtering and meat-packing industry the gains were comparatively insignificant. The automobile industry and the rubber-tire industry, however, scarcely existed in 1899. The rapidly growing demand for their products created an intense development within a short period of time and resulted in enormous increases in labor productivity. On the other hand, the boot and shoe industry and the slaughtering and meat-packing industry were already well developed in the early years included in this study. High levels of productivity had been reached, the technique of the industry had been developed, and the demand for the products was fairly stable. Consequently these industries could not be expected to show such remarkable increases in labor productivity as are shown by the more newly developed industries.

#### Iron and Steel Industry

The iron and steel industry, as considered in this study, covers the three primary groups of manufactured products: Unrolled iron and steel, consisting of pig iron, steel ingots, and castings direct from the furnaces; semifinished rolled iron and steel, consisting of billets,

blooms, slabs, and sheet and tin-plate bars; finished rolled and forged iron and steel, consisting of bars, plates, rods, sheets, skelp, structural shapes, rails, and other products of rolling mills. Machinery and other elaborate manufactures from rolling-mill and foundry products are not included.

The key products of the industry, pig iron in the case of the blast-furnace branch, and steel ingots and direct castings in the case of the steel-works and rolling-mills branch, have been considered as representative of the output for the industry, when combined after proper weighting of each. They are both intermediate products, and nearly all the finished products of iron and steel have passed through one or the other of these stages.

The index numbers of man-hours, production, and man-hour productivity for the industry from 1899 to 1927 are shown in Table 3.

TABLE 3.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE IRON AND STEEL INDUSTRY, FOR SPECIFIED YEARS, 1899 TO 1927

[1914 = 100]

Year	Man-hours	Production	Man-hour productivity	Year	Man-hours	Production	Man-hour productivity
1899	79	47	59	1923	144	188	131
1904	88	61	69	1924	121	157	130
1909	103	103	100	1925	123	188	153
1914	100	100	100	1926	127	200	157
1919	144	144	100	1927	120	186	155
1921	93	81	87				

To render the situation for the period clear at a glance, the trend of the three sets of index numbers from 1914 to 1927 is presented in Chart 1.

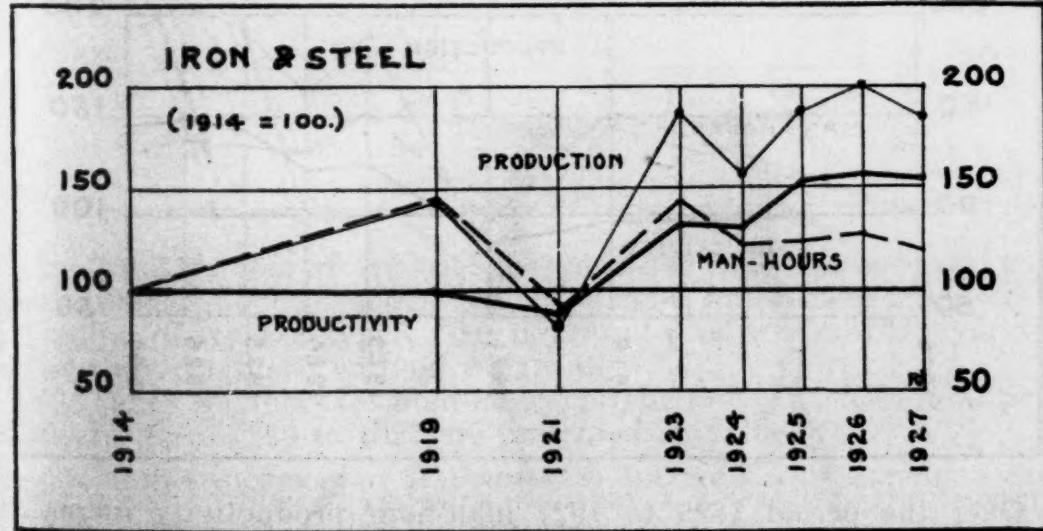


CHART 1

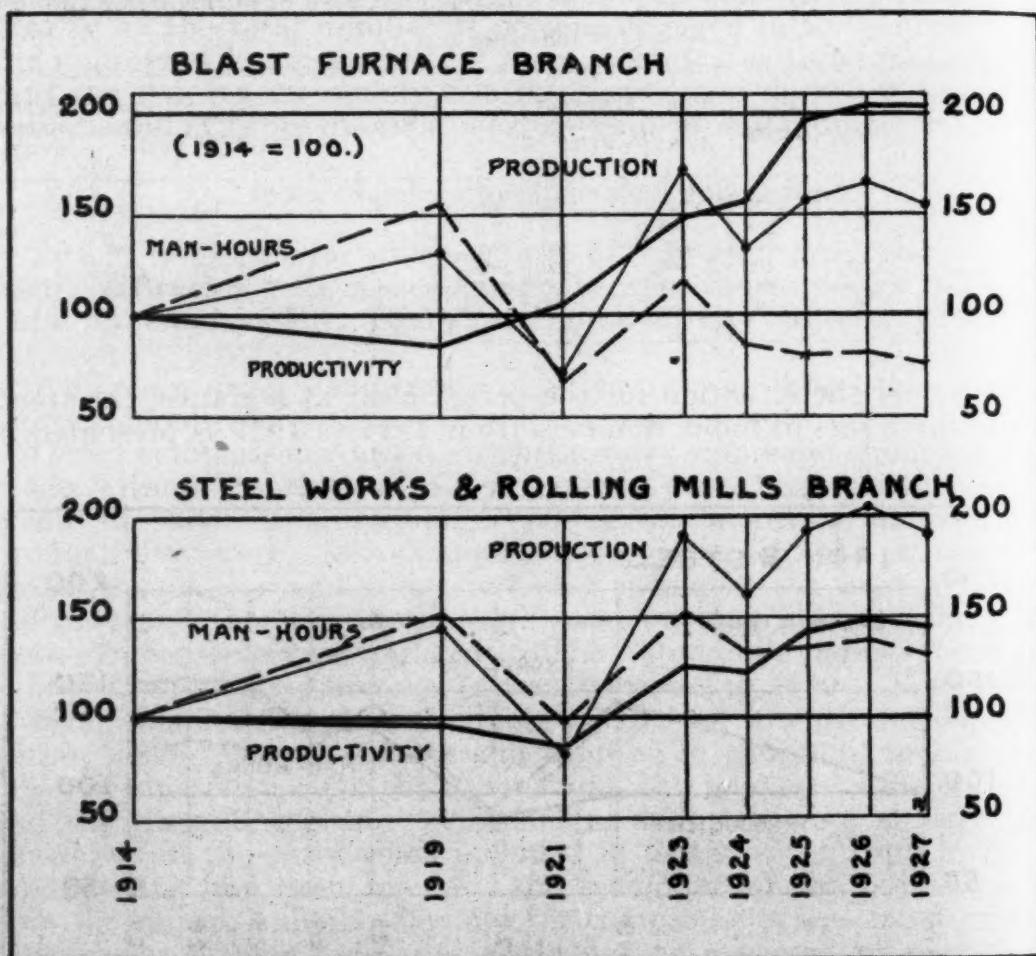
*Blast furnaces, and steel works and rolling mills.*—Separate index numbers of man-hours, production, and man-hour productivity were prepared for each of the two branches of the iron and steel industry—blast furnaces, and steel works and rolling mills. These are presented in Table 4.

TABLE 4.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN BLAST FURNACES AND IN STEEL WORKS AND ROLLING MILLS, FOR SPECIFIED YEARS, 1899 TO 1927

[1914 = 100]

Year	Blast furnaces			Steel works and rolling mills		
	Man-hours	Production	Man-hour productivity	Man-hours	Production	Man-hour productivity
1899	132	58	44	72	45	63
1904	121	71	59	84	59	70
1909	139	111	80	98	102	104
1914	100	100	100	100	100	100
1919	155	131	85	151	145	96
1921	67	71	106	97	82	85
1923	116	173	149	151	190	126
1924	86	134	156	131	161	123
1925	80	157	196	135	193	143
1926	82	167	204	138	205	149
1927	77	156	203	131	191	146

The trend of the index numbers from 1914 to 1927 for each of the two branches is shown in Chart 2.



Over the period 1899 to 1927 man-hour productivity increased more rapidly in blast furnaces than in steel works and rolling mills, 361 per cent against 132 per cent. This was partly because greater improvements had been made in both machinery and technical operation in the blast-furnace branch of the industry, and partly because whenever depressions occurred the smaller and inefficient blast furnaces were closed down, leaving only the higher-productivity plants in operation. Consequently man-hour productivity actually in-

creased during periods of depression in spite of reduced total production, except during the slight decline in 1926 to 1927. In the steel works and rolling mills, however, the total output decreased considerably faster than the corresponding man-hours during periods of depression, resulting in reduced man-hour output.

The index numbers for the steel works and rolling mills correspond in a general way with those for the industry as a whole, because that branch is by far the larger of the two. During the period covered by this study it has employed from six to thirteen times as many workers as the blast furnaces.

#### Boot and Shoe Industry

The boot and shoe industry covers the manufacture of boots, shoes, sandals, moccasins, leggings, gaiters, and miscellaneous footwear, other than rubber. The material used is principally leather, though canvas and other textile fabrics are also included.

The trend of the three sets of index numbers from 1914 to 1927 is shown in Chart 3.

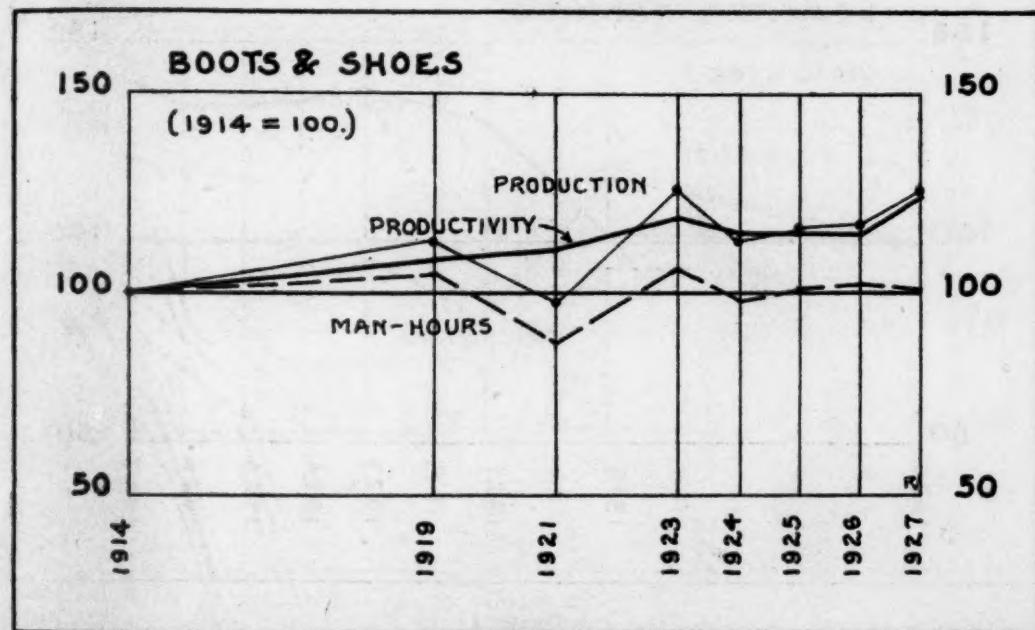


CHART 3

The total number of pairs of shoes manufactured was accepted as a measurement for the construction of the index numbers of production, regardless of style or type. The figures of production of the various styles were combined without weighting.

The index numbers for man-hours, production, and man-hour productivity from 1899 to 1927 are presented in Table 5.

TABLE 5.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE BOOT AND SHOE INDUSTRY, FOR SPECIFIED YEARS, 1899 TO 1927  
[1914 = 100]

Year	Man-hours	Production	Man-hour productivity	Year	Man-hours	Production	Man-hour productivity
1899	77	77	100	1923	106	126	119
1904	80	86	108	1924	98	113	115
1909	100	100	100	1925	101	116	115
1914	100	100	100	1926	102	117	115
1919	105	113	108	1927	101	125	124
1921	88	98	111				

## Leather-Tanning Industry

The leather-tanning industry covers the manufacture of leather from hides and skins of all kinds, including the tanning, currying, and finishing of the leather, but not the manufacture of products from that material.

The principal products, consisting of sole and belting leather, and upper leather (including patent leather), were used to determine the index numbers for production, since some 80 per cent of the hides and skins tanned are used for shoe and belting leathers. The output of sole and belting leather was reduced to pounds, and that of upper leather to square feet, and an index was constructed for each. These indexes were weighted, and a composite index for the industry was then obtained by combining the weighted indexes.

The trend of the index numbers for man-hours, production, and man-hour productivity from 1914 to 1927 is shown in Chart 4.

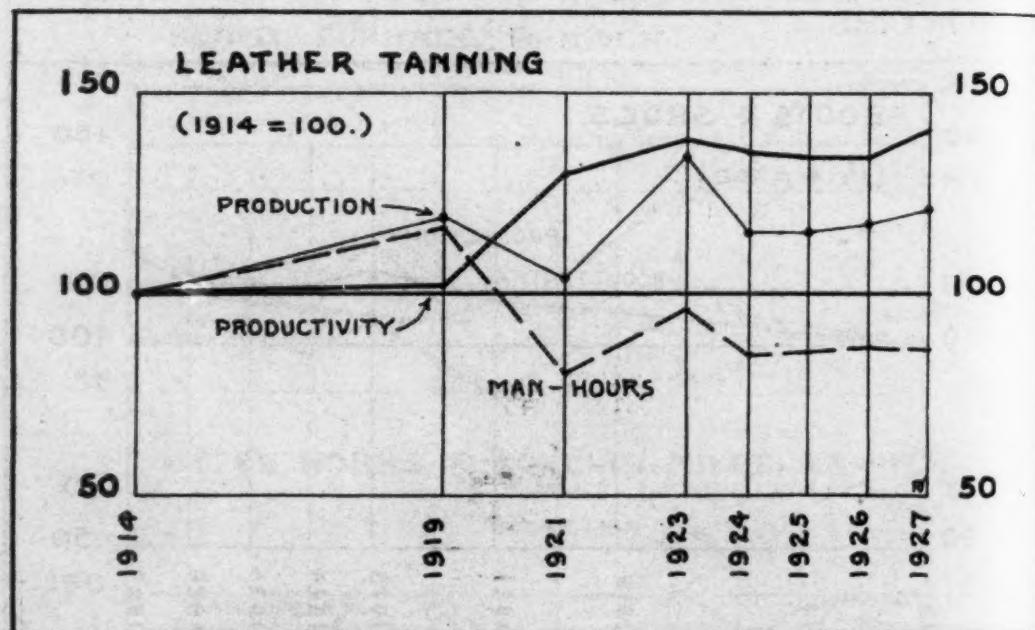


CHART 4

The index numbers for man-hours, production, and man-hour productivity from 1899 to 1927 are presented in Table 6.

TABLE 6.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE LEATHER-TANNING INDUSTRY, FOR SPECIFIED YEARS, 1899 TO 1927

[1914 = 100]

Year	Man-hours	Production	Man-hour productivity	Year	Man-hours	Production	Man-hour productivity
1899	92	96	93	1923	97	134	138
1904	102	94	92	1924	85	115	135
1909	112	103	92	1925	86	115	134
1914	100	100	100	1926	87	117	134
1919	117	119	102	1927	86	121	141
1921	80	104	120				

## Slaughtering and Meat-Pack ing Industry

The slaughtering and meat-packing industry covers the slaughtering of cattle and calves, sheep and lambs, goats and kids, and hogs, and the preparation of the meat products in wholesale establishments, but does not include the small concerns which furnish meat only for direct retail trade nor slaughtering done on farms for consumption or sale.

The index numbers of production were computed from the combined output (in pounds) for the principal products: Meats; lard; hides, skins, or pelts; and hair or wool. The various items of production were not weighted.

The trend of the index numbers for man-hours, production, and man-hour productivity from 1914 to 1927 is shown in Chart 5.

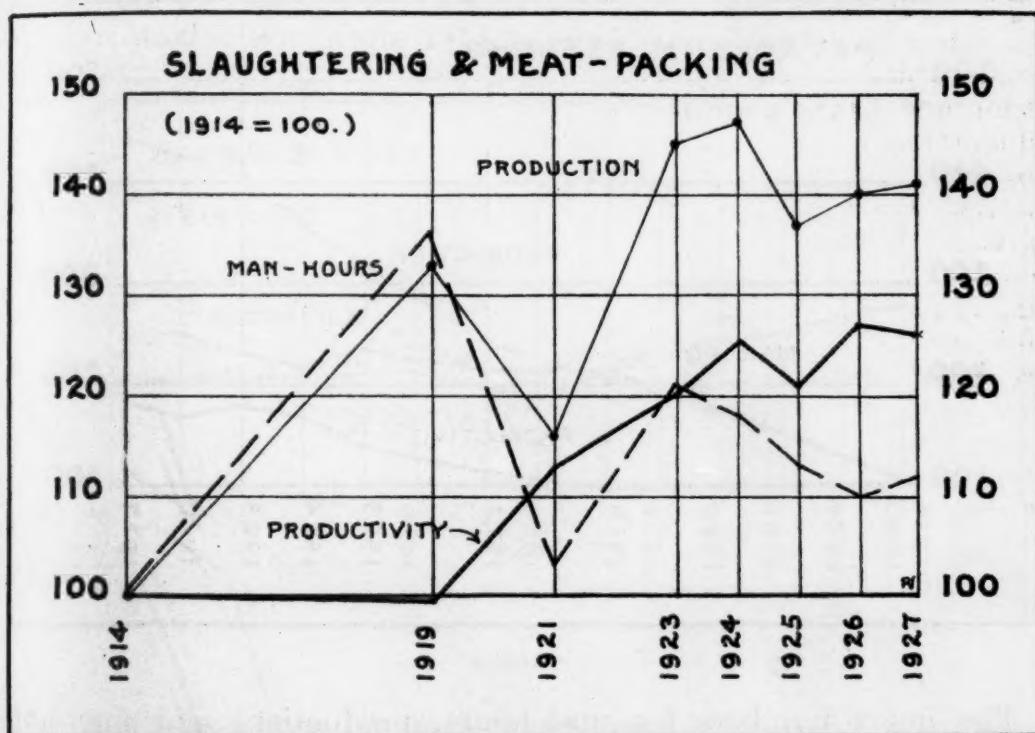


CHART 5

The three sets of index numbers, which do not go back so far as those for the preceding industries, but cover only the period 1909 to 1927, are presented in Table 7.

TABLE 7.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE SLAUGHTERING AND MEAT-PACKING INDUSTRY, FOR SPECIFIED YEARS, 1909 TO 1927

[1914 = 100]

Year	Man-hours	Production	Man-hour productivity	Year	Man-hours	Production	Man-hour productivity
1909	89	102	115	1924	118	147	125
1914	100	100	100	1925	113	137	121
1919	136	133	98	1926	110	140	127
1921	103	116	113	1927	112	141	126
1923	121	145	120				

## Petroleum-Refining Industry

The petroleum-refining industry covers the refining of crude petroleum by fractional distillation, to separate the natural constituents into a variety of products, the principal ones of which are gasoline, fuel oils, lubricants, and illuminating oils. These four major products alone are often used to measure the output of the industry, but in this study the index numbers for production were computed from the total output of all products (in barrels or barrels equivalent), combined without weighting.

The trend of the three sets of index numbers from 1914 to 1927 is presented in Chart 6.

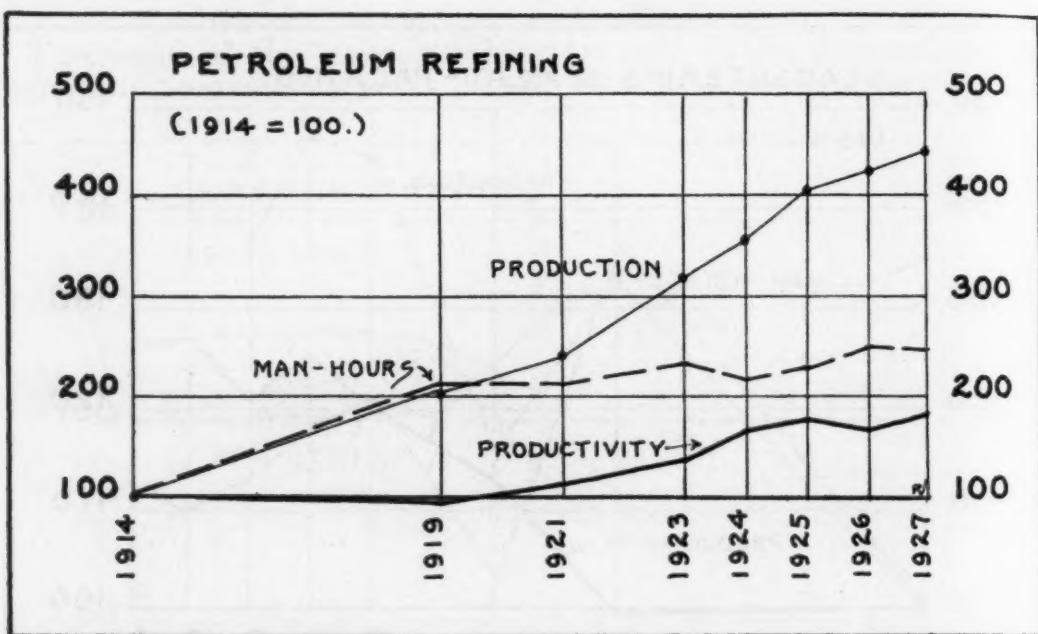


CHART 6

The index numbers for man-hours, production, and man-hour productivity, from 1899 to 1927, are presented in Table 8.

TABLE 8.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE PETROLEUM-REFINING INDUSTRY, FOR SPECIFIED YEARS, 1899 TO 1927

[1914 = 100]

Year	Man-hours	Production	Man-hour productivity	Year	Man-hours	Production	Man-hour productivity
1899	44	27	61	1923	232	319	138
1904	61	35	57	1924	216	357	165
1909	54	63	117	1925	226	405	179
1914	100	100	100	1926	249	422	169
1919	208	202	97	1927	243	443	182
1921	210	239	114				

## Paper and Pulp Industry

The paper and pulp industry covers the manufacture of all classes of wood pulp, and all classes of paper and paper board, but not the manufacture of articles from paper or paper board.

A series of index numbers was prepared for each of the two major groups of wood pulp—mechanical and chemical. These were weighted and combined. A similar series was prepared for each of the six major groups of manufactured paper—newsprint, book paper, writing paper, wrapping paper, box board, and all other grades together. These were likewise weighted and combined. The resulting index numbers for pulp and for paper were combined, without weighting, to form composite index numbers for the industry as a whole.

The trend of the index numbers for man-hours, production, and man-hour productivity from 1914 to 1927 is presented in Chart 7.

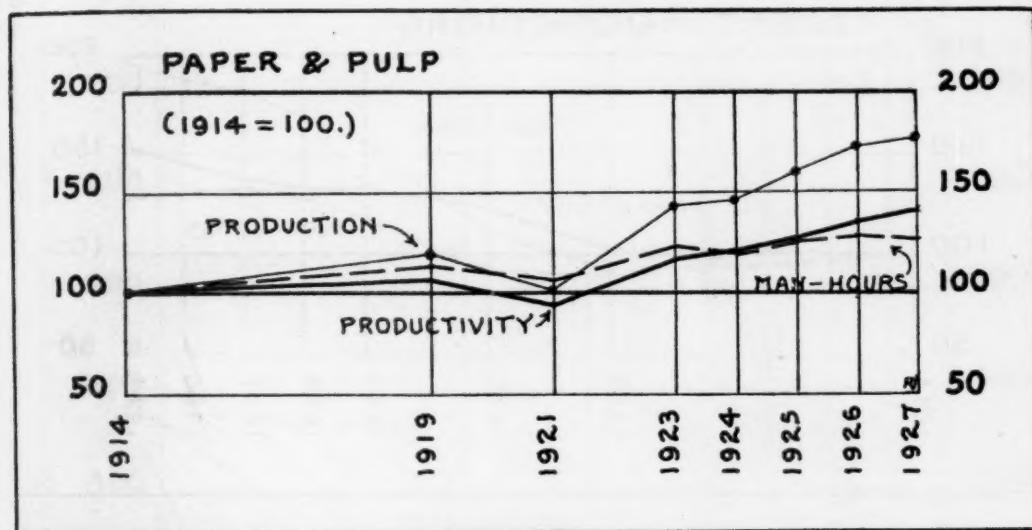


CHART 7

The index numbers for man-hours, production, and man-hour productivity during the period 1904 to 1927 are shown in Table 9.

TABLE 9.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE PAPER AND PULP INDUSTRY, FOR SPECIFIED YEARS, 1904 TO 1927  
[1914 = 100]

Year	Man-hours	Production	Man-hour productivity	Year	Man-hours	Production	Man-hour productivity
1904	75	62	83	1923	122	143	117
1909	88	84	95	1924	120	145	121
1914	100	100	100	1925	126	160	127
1919	114	120	105	1926	128	174	136
1921	106	101	95	1927	126	176	140

## Cement Manufacturing Industry

The cement industry covers the manufacture of all kinds of hydraulic cement. The principal product is Portland cement, but small quantities of natural cement and pizzolan cement are also manufactured. Refractory cement is not included, nor is the manufacture of products from the hydraulic cement.

As Portland cement constitutes uniformly about 99 per cent of all hydraulic cements manufactured in this country, the index numbers for production were based on the output of this product alone. The production figures were obtained from data published annually by the United States Bureau of Mines,<sup>6</sup> in preference to the

The trend of the three sets of index numbers from 1914 to 1927 is presented in Chart 8.

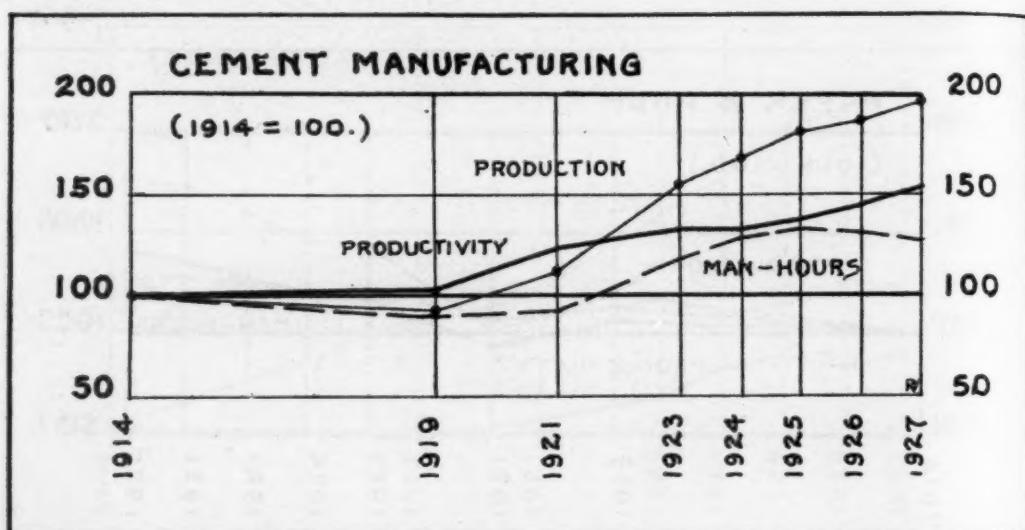


CHART 8

data in the Census of Manufactures, as the trend is similar and both census years and intervening years are covered by the Bureau of Mines.

The index numbers for man-hours, production, and man-hour productivity for the period of 1914 to 1927 are shown in Table 10.

TABLE 10.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE CEMENT-MANUFACTURING INDUSTRY, FOR SPECIFIED YEARS, 1914 TO 1927  
[1914=100]

Year	Man-hours	Production	Man-hour productivity	Year	Man-hours	Production	Man-hour productivity
1914	100	100	100	1924	128	169	132
1919	91	92	101	1925	133	183	138
1921	91	112	123	1926	130	187	144
1923	118	156	132	1927	127	196	154

<sup>6</sup> U. S. Department of Commerce, Bureau of Mines. Mineral Resources of the United States.

## Automobile Industry

The automobile industry covers not only the manufacture of all classes of complete motor vehicles, but also the manufacture for sale of automobile bodies and parts used in the manufacture of automobiles. Batteries, engines, lighting and starting systems, motors, rubber tires, and vehicle springs are not included.

The trend of the index numbers for man-hours, production, and man-hour productivity from 1914 to 1927 is presented in Chart 9.

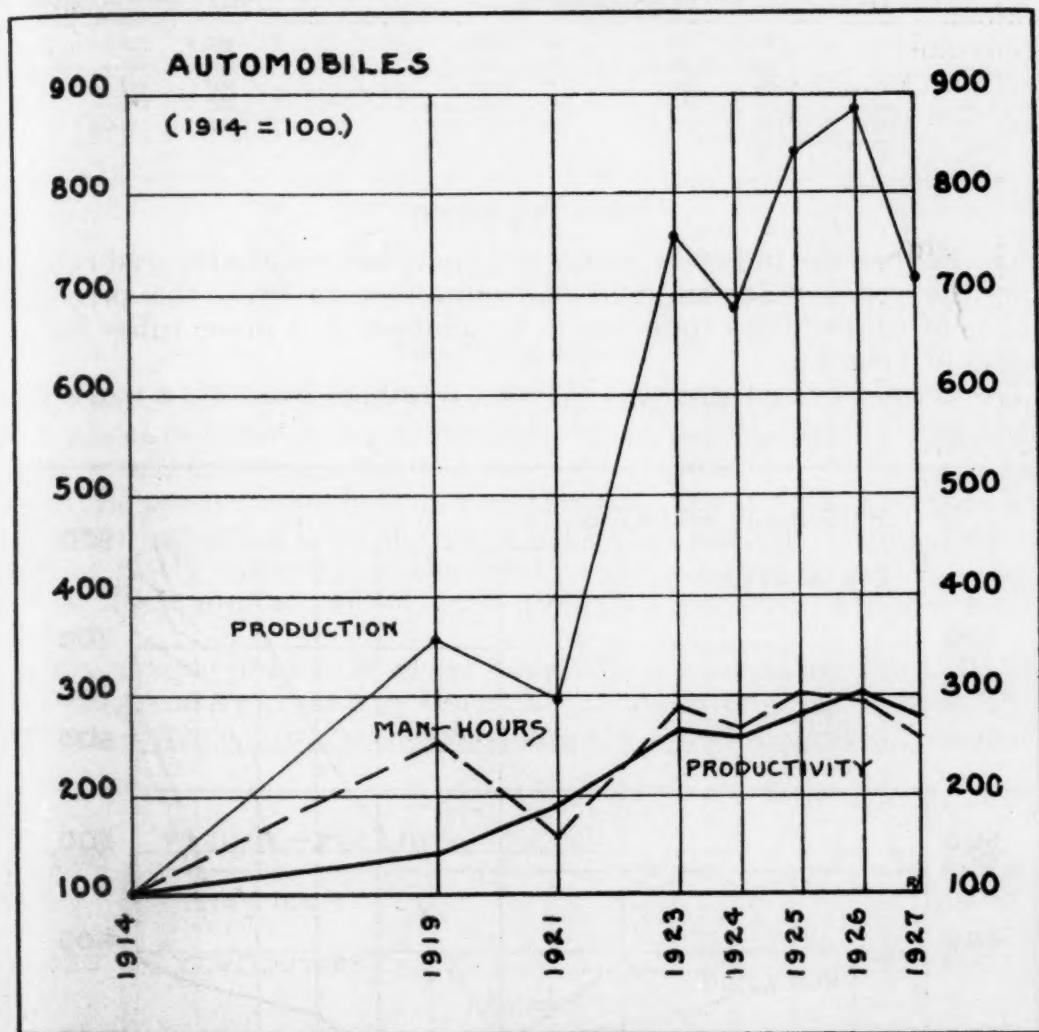


CHART 9

The index numbers of production are based on the total number of motor vehicles produced each year, divided into three groups—open cars, closed cars, and trucks. Index numbers were prepared for each group, and the three index numbers were combined, after weighting, to form a composite index number for the industry as a whole. The census figures for production did not permit segregation of the number of motor vehicles manufactured in the United States from those manufactured in American-owned establishments located in Canada. Consequently, the production figures published by the National

Automobile Chamber of Commerce in 1927 and 1928<sup>7</sup> were chosen in preference.

The index numbers for man-hours, production, and man-hour productivity from 1904 to 1927 are shown in Table 11.

TABLE 11.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE AUTOMOBILE INDUSTRY, FOR SPECIFIED YEARS, 1904 TO 1927

[1914 = 100]

Year	Man-hours	Production	Man-hour productivity	Year	Man-hours	Production	Man-hour productivity
1904	10	4	40	1923	286	758	265
1909	62	22	35	1924	266	687	258
1914	100	100	100	1925	301	842	280
1919	252	355	141	1926	293	884	302
1921	157	298	190	1927	258	718	278

#### Rubber-Tire Industry

The rubber-tire industry covers the manufacture of prepared rubber from the crude material, and the manufacture from the prepared rubber of rubber tires (pneumatic or solid) and of inner tubes for all classes of vehicles.

The trend of the three sets of index numbers from 1914 to 1927 is presented in Chart 10.

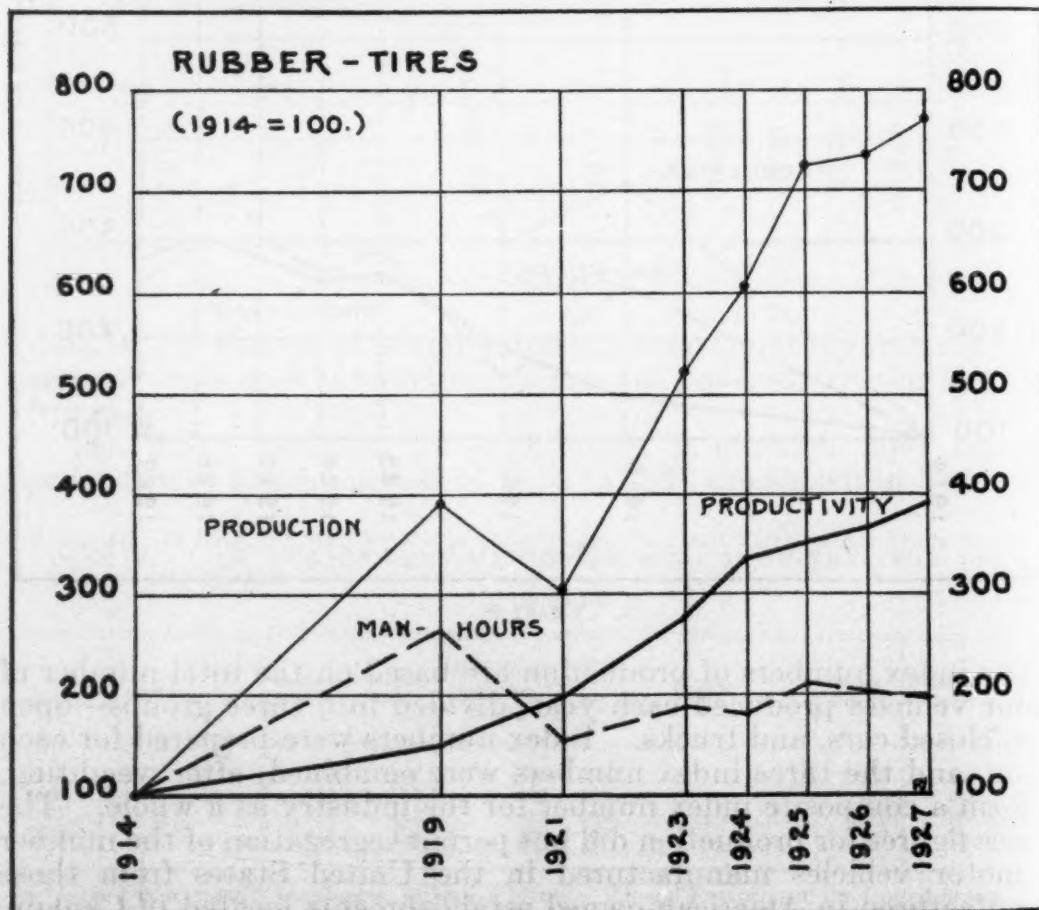


CHART 10

<sup>7</sup> National Automobile Chamber of Commerce pamphlets. Facts and figures of the automobile industry.

Index numbers were prepared for the total output of each of the three main divisions of products: Pneumatic tires, including motor cycle and bicycle tires as well as tires for motor vehicles; inner tubes, likewise for the three types of vehicles; and solid tires for trucks, etc. After weighting the respective index numbers for each year, they were combined to form a composite index number for the industry.

The index numbers for man-hours, production, and man-hour productivity during the period of 1914 to 1927 are shown in Table 12.

TABLE 12.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE RUBBER-TIRE INDUSTRY, FOR SPECIFIED YEARS, 1914 TO 1927

[1914 = 100]

Year	Man-hours	Produc-tion	Man-hour produc-tivity	Year	Man-hours	Produc-tion	Man-hour produc-tivity
1914	100	100	100	1924	180	608	338
1919	262	391	149	1925	207	728	352
1921	154	305	198	1926	202	739	366
1923	187	521	279	1927	197	773	392

#### Flour-Milling Industry

The flour-milling industry covers the manufacture of flour or meal from wheat or other grains in commercial or merchant mills, establishments which are engaged in the purchase and milling of grain and the sale of the products made from it. Custom or grist mills, which do not buy grain but grind it on shares or for a stipulated price and produce approximately 5 per cent of the total for the country, are not included; nor is the manufacture of food preparations from the grain-mill products.

The principal product is wheat flour, which constitutes three-fifths of the total quantity ground by the mills. Other products, in the order of their importance, are: Feed, screenings, etc.; bran and middlings; corn

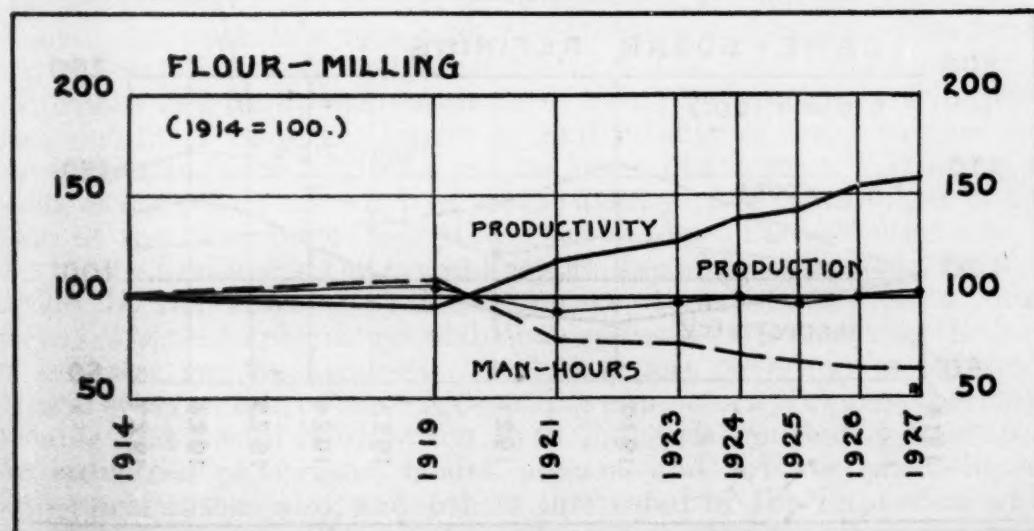


CHART 11

meal and corn flour; rye flour; and buckwheat flour. Index numbers of production were computed from the total output of all products, reduced to pounds, and added without weighting.

The index numbers for man-hours, production, and man-hour productivity for the period of 1904 to 1927 are shown in Table 13.

TABLE 13.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE FLOUR-MILLING INDUSTRY, FOR SPECIFIED YEARS, 1904 TO 1927

[1914 = 100]

Year	Man-hours	Production	Man-hour productivity	Year	Man-hours	Production	Man-hour productivity
1904	97	91	94	1923	77	98	127
1909	105	97	92	1924	72	100	139
1914	100	100	100	1925	68	97	143
1919	109	104	95	1926	65	100	154
1921	79	93	118	1927	64	102	159

The trend of three sets of index numbers from 1914 to 1927 are presented in Chart 11.

#### Cane-Sugar Refining Industry

The cane-sugar refining industry covers the refining of raw cane sugar, practically all of which is imported, but does not include sugar from cane grown in the United States nor the refining of beet sugar.

The products consist of sugar in various forms, sirup, and molasses, but the index numbers for production were based solely on the total amount of refined sugar produced, disregarding specialty products and by-products.

The trend of the index numbers for man-hours, production, and man-hour productivity from 1914 to 1927 is presented in Chart 12.

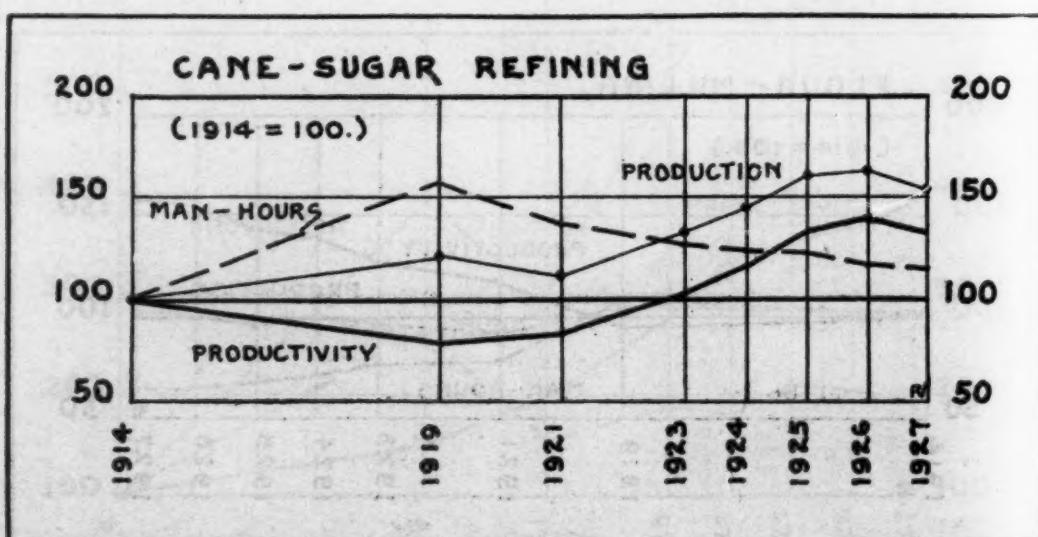


CHART 12

The index numbers for man-hours, production, and man-hour productivity for the period of 1914 to 1927 are shown in Table 14.

TABLE 14.—INDEX NUMBERS OF MAN-HOURS, PRODUCTION, AND MAN-HOUR PRODUCTIVITY IN THE CANE-SUGAR REFINING INDUSTRY, FOR SPECIFIED YEARS, 1914 TO 1927

[1914 = 100]

Year	Man-hours	Production	Man-hour productivity	Year	Man-hours	Production	Man-hour productivity
1914	100	100	100	1924	124	145	117
1919	156	121	78	1925	122	162	133
1921	136	113	83	1926	117	164	140
1923	128	133	104	1927	116	154	133

### Causes of Death, by Occupation

A STUDY of the causes of death by occupation among a large industrial group, now in course of publication by the Bureau of Labor Statistics,<sup>1</sup> shows the changes in health conditions among the wage earners of the Nation as compared with conditions revealed by a similar study for the years 1911 to 1913.

The present study analyzes the causes of death among 3,250,000 white male policyholders 15 years and older insured in the industrial department of the Metropolitan Life Insurance Co. Of this number 112,364 died during the years 1922, 1923, and 1924, and while information was not complete in regard to the occupational classification of the entire number, the occupations of 105,467 of these persons were known and it is this group, therefore, that forms the basis of the study.

Various conditions have had a profound influence upon the health situation of the industrial population. Chief among these are improvements in machinery, changes in industrial processes, new findings regarding the sanitation of factories, reductions in the hours of labor, increases in wages, and the extensive welfare activities which are characteristic of modern industry. The betterment of living conditions and improved standards of living have made their impress very definitely upon the longevity and vitality of wage earners and have been immediately reflected in lower death rates. Workers 20 years of age may expect to live, on the average, five years longer to-day than at the time the earlier study was made. These facts, brought out by the findings of the present report, are of great importance, as it is only by the widespread dissemination of such facts that a sound means of bettering working conditions and still further raising the level of industry can be attained. Such a report covering, as it does, a typical cross section of the wage-earning population provides, therefore, reliable and useful information as to industrial morbidity conditions for industrial physicians, health officers, and private practitioners. Labor arbitrators, also, and others interested in the improvement of working conditions will learn about some of the less satisfactory aspects of the present industrial situation and, having this knowledge, will be in a far better position to find a solution for their problems.

<sup>1</sup> U. S. Bureau of Labor Statistics Bul. No. 507: Causes of death, by occupation, by Louis I. Dublin and Robert J. Vane, Jr.

The method of analysis followed in the report has been in general the same as that used in the previous study. Since the number of insured persons in each occupation was not known, the method of proportionate mortality has been followed; that is, for each occupation the part that any cause of death has played in the total mortality was found, taking into account the factor of age. This has been found to be a satisfactory method of working out practical problems of industrial hygiene although certain allowances for the lack of accurate knowledge of the occupational status of living policyholders have to be made. The causes of death have been classified as heretofore, according to the standard method used by the United States Census Bureau, and the occupations have been classified according to an abridged and modified list of titles based on the classified index to occupations of the Bureau of the Census, so that comparability with the previous study and with data of the Census Bureau have been maintained. It is thus possible to consider the newer material in the light of the old and to compare it with publications of similar insurance experience which may be issued from time to time by agencies following these methods.

The group of persons included in these mortality tables consists mainly of workers in the United States and Canada in manufacturing plants, mines, transportation industries, and mechanical pursuits; it constitutes, therefore, a fairly homogeneous social and economic group which is predominantly urban. Although the group is considered typical of the wage-earning population of the country, it includes fewer agricultural workers, professional people, executives, and small, independent business men than does the entire working population.

#### Mortality Rates of Different Groups

A COMPARISON of the mortality experience of the group as a whole with the rates at the same ages for men in the general population of the United States registration States shows that the mortality rate for all ages combined is lower for the insured group than for the males in the registration States, the rates in 1923 being, respectively, 11.8 and 13.8 per thousand. This condition is due, however, to the lower mortality in the first age group, 15 to 24 years, and in the last, 65 years and over. At age 25 the mortality rate of the industrial group is higher and it increases progressively up to 54 years, the death rate for the age period 45 to 54 years being 43 per cent higher than that of the general population, while in the next period, 55 to 64 years, the rate is 34 per cent higher. These rates reflect primarily the results of industrial exposure. The lower rate for the insured group in the beginning is accounted for by the fact that the group is then in its best physical condition; the rates for the last age period, where the insured again make a more favorable showing, are not reliable, because most of the industrial policies terminate at age 74.

The effects of industry are also reflected in the differential death rates for males and females, as a comparison of the rates for the male insured group with those for the company's female industrial policyholders shows that after age 10 the mortality rates for males are consistently higher than those for females with the single exception of the age period 15 to 24 years, when the industrialization of women

is at its height. After that period the majority become housewives and the lowered rate is ascribed to the absence of industrial hazards in the lives of most women.

An even greater difference suggestive of the effects of industrial exposures is found when the mortality of industrial males is compared with that of persons who are mainly engaged in nonhazardous pursuits. A comparison of the rates for the industrial group with those for male policyholders in the ordinary department of the Metropolitan Life Insurance Co.—a group composed mainly of the clerical, professional, and commercial classes, with a fairly large number of agricultural workers and better-paid mechanics—shows that, age for age, the mortality rates for the industrial group run from one and one-half times to more than two times the rates for policyholders in the ordinary department.

The less favorable situation of the industrial worker is also shown by the figures for life expectancy. At the age of 20 the industrial worker has an expectation of life of 42 years; or in other words he may expect to reach age 62. Among those engaged in nonhazardous occupations, however, the 20-year old worker may expect to attain the age of 69, or seven years additional. At succeeding age periods the advantage still remains on the side of the nonindustrial group.

The comparisons of these different groups all show the influence of industrial environment on mortality rates and life expectation and the rates give a rough measure, therefore, of the tax which industrial work exacts and of the hazards to which workers are exposed.

### Causes of Death

COMPARISON of the principal causes of death in 1912 and 1923, the midyears of the two studies, shows that the most important causes in 1923 were organic diseases of the heart with a rate of 188.7 per 100,000, tuberculosis of the respiratory system (149.7), and influenza-pneumonia (124). In 1912, tuberculosis of the lungs with a rate of 319.9 was the leading cause of death, while organic diseases of the heart with a rate of 203.9 held second place, and nephritis with a rate of 178.1 was third. At ages 15 to 24, in 1923, accidental or undefined violence was the leading cause of death, with tuberculosis of the respiratory system holding second place. The position of accidental violence and tuberculosis was reversed for the next two age periods, while after age 44 years diseases of the heart became the chief cause of death with death rates of 253.3 in the age group 45 to 54, and of 681.3 in the 55 to 64 age group. In the first of these periods tuberculosis was second in numerical importance with a rate of 218.5; but in the latter it was superseded by cancer, which showed a rate of 436.2, and by nephritis and cerebral hemorrhage, each of which had a rate of 363.

Almost every cause of death has shown a downward trend in mortality. Tuberculosis of the respiratory system, one of the most important causes, has shown a very great improvement, the death rate decreasing from 319.9 per 100,000 in 1912 to 149.7 in 1923, or a reduction of 53.2 per cent. Workers 25 to 34 years of age and 35 to 44 years were the most favorably affected, the decrease amounting to 60.2 and 62.6 per cent, respectively. Nephritis has shown a significant but smaller decrease of 38 per cent, the rates declining from

NUMBER OF DEATHS AND DEATH RATES, 1923, AND PER CENT DECLINE IN DEATH  
WHITE MALES, AGED 15 AND OVER, BY AGE PERIODS. METRO

Line No.	Cause of death	1920 international list numbers	Age period (years)			
			15 and over		15 to 24	
			Number of deaths, 1923	Death rate per 100,000, 1923	Per cent decline in death rate, <sup>1</sup> 1912-1923	Death rate per 100,000, 1923
1	All causes	38,427	1,183.5	27.0	347.2	26.0
2	Typhoid fever	1	202	6.2	72.2	9.7
3	Influenza, pneumonia	11,100-101	4,025	124.0	9.9	32.6
4	Influenza	11	1,020	31.4	157.4	11.3
5	Pneumonia (all forms)	100,101	3,005	92.5	26.2	21.3
6	Pneumonia (lobar and undefined)	101	2,256	69.5	34.1	17.0
7	Other diseases of the respiratory system	97-99, 102-107	592	18.2	36.4	3.7
8	Tuberculosis of the respiratory system	31	4,862	149.7	53.2	80.2
9	Syphilis, tabes dorsalis, and general paralysis of insane	38,72,76	854	26.3	.4	1.6
10	Cancer (all forms)	43-49	3,082	94.9	22.3	3.4
11	Rheumatism (acute and chronic)	51,52	132	4.1	50.0	3.9
12	Diabetes	57	578	17.8	12.7	4.1
13	Aleoholism	66	327	10.1	35.7	.4
14	Cirrhosis of the liver	122	405	12.5	65.4	.4
15	Chronic poisoning by mineral and organic substances	67-68	41	1.3	35.0	.3
16	Chronic lead poisoning	67 (a)	26	.8	50.0	.1
17	Other chronic poisonings	67 (b), 68	15	.5		.3
18	Cerebral hemorrhage, apoplexy, paralysis	74,75	2,862	88.1	19.5	1.4
19	Other diseases of the heart	90	6,127	188.7	7.5	26.0
20	Diseases of the arteries	91	650	20.0	40.8	.1
21	Arteriosclerosis	91 (b)	543	16.7	(?)	(?)
22	Nephritis (acute and chronic)	128,129	3,588	110.5	38.0	8.2
23	Suicides (all forms)	165-174	647	19.9	42.2	5.0
24	Accidental or undefined violence	175-196, 201-203	3,936	121.2	13.8	89.0
25	Other acute poisonings (gas excepted)	177	61	1.9	24.0	.8
26	Conflagration	178	36	1.1	8.3	.4
27	Accidental burns (conflagration excepted)	179	105	3.2	18.5	1.7
28	Accidental mechanical suffocation	180	15	.5	(?)	.3
29	Accidental absorption of irrespirable or poisonous gases	181	213	6.6	(?)	1.7
30	Accidental drowning	182	466	14.4	28.0	19.4
31	Accidental traumatism by fall	183	518	16.0	38.2	4.9
32	Accidental traumatism in mines and quarries	186	136	4.2	4.5	3.0
33	Accidental traumatism by machines	187	181	5.6	16.7	5.6
34	Railroad accidents	188(a)	458	14.1	48.5	11.2
35	Street-car accidents	188(b)	130	4.0	50.6	1.7
36	Automobile accidents	188(c)	845	26.0	465.2	17.6
37	Other accidental electric shocks	196	85	2.6	7.1	3.2
38	Homicides (all forms)	197-199	314	9.7	18.3	7.0
	Exposure			3,246,984		1,150,758

<sup>1</sup> Bold-face figures denote increase.

## CAUSES OF DEATH, BY OCCUPATION

21

RATES, 1912 TO 1923, FROM SPECIFIED CAUSES OF DEATH, IN ALL OCCUPATIONS,  
POLITAN LIFE INSURANCE CO., INDUSTRIAL DEPARTMENT

Age period (years)										Line No.	
25 to 34		35 to 44		45 to 54		55 to 64		65 and over			
Death rate per 100,000, 1923	Per cent decline in death rate, <sup>1</sup> 1912-1923	Death rate per 100,000, 1923	Per cent decline in death rate, <sup>1</sup> 1912-1923	Death rate per 100,000, 1923	Per cent decline in death rate, <sup>1</sup> 1912-1923	Death rate per 100,000, 1923	Per cent decline in death rate, <sup>1</sup> 1912-1923	Death rate per 100,000, 1923	Per cent decline in death rate, <sup>1</sup> 1912-1923		
556.1	43.1	946.6	41.2	1,725.4	26.3	3,385.3	16.4	7,574.7	13.4	1	
5.0	81.3	3.9	80.7	4.0	78.7	4.9	70.5	1.7	79.8	2	
61.2	25.7	117.6	17.9	191.3	12.7	352.2	4.1	696.8	3.5	3	
15.9	341.7	29.3	306.9	43.0	144.3	82.5	116.0	180.9	101.0	4	
45.3	42.4	88.2	35.2	148.4	26.4	269.8	18.0	515.9	18.4	5	
37.7	46.9	71.2	42.9	120.9	29.4	189.9	30.8	327.4	26.8	6	
5.0	54.1	12.1	28.4	31.5	12.5	56.7	26.5	139.9	45.5	7	
162.5	60.2	196.1	62.6	218.5	49.6	200.0	38.0	183.4	22.4	8	
14.5	1.4	47.0	1.7	58.4	3.3	61.6	5.1	58.6	19.9	9	
9.7	47.0	42.4	6.8	166.6	15.5	436.2	30.6	755.4	20.3	10	
2.0	25.9	3.7	45.6	4.5	71.5	7.8	49.4	10.9	71.6	11	
6.6	14.3	8.3	5.7	26.0	2.8	72.4	60.9	115.6	10.8	12	
5.1	61.4	20.0	41.0	24.0	28.1	22.8	5.0	14.2	50.7	13	
1.8	86.4	8.6	78.9	23.2	72.6	56.3	51.7	79.6	51.9	14	
1.2	71.4	1.5	58.3	3.5	18.6	2.2	60.0	-----	100.0	15	
.4	20.0	1.3	50.0	2.5	35.9	1.9	55.8	-----	100.0	16	
.8	300.0	.2	80.0	1.0	150.0	.4	66.7	-----	100.0	17	
4.8	55.1	22.4	38.6	100.9	19.0	363.0	15.0	1,097.1	9.4	18	
39.6	28.4	86.6	33.5	253.3	3.3	681.3	1.7	1,854.1	3.7	19	
1.0	37.5	6.8	9.3	16.5	14.5	55.6	46.9	325.8	35.8	20	
.4	(2)	1.8	(2)	9.0	(2)	48.1	(2)	305.7	(2)	21	
25.0	50.8	67.5	55.7	175.1	38.2	363.0	39.4	1,056.0	18.7	22	
14.3	45.6	26.2	45.3	35.5	44.4	45.9	38.0	60.3	10.3	23	
95.9	18.0	118.3	21.2	148.1	24.6	213.1	6.3	310.7	15.9	24	
1.3	43.5	3.3	-----	3.5	31.4	3.7	32.7	-----	100.0	25	
1.7	750.0	.9	60.9	1.2	7.7	1.1	38.9	4.2	41.7	26	
2.1	16.7	2.8	7.7	5.5	1.8	6.0	62.2	13.4	59.5	27	
.1	(2)	.6	(2)	1.0	(2)	1.1	(2)	-----	(2)	28	
2.9	(2)	7.7	(2)	12.2	(2)	19.8	(2)	23.4	(2)	29	
13.4	26.4	11.0	39.6	10.5	46.7	11.2	35.3	7.5	65.3	30	
8.6	50.0	12.8	53.1	27.2	39.4	45.5	17.1	79.6	34.3	31	
3.7	14.0	6.4	52.4	5.5	1.8	4.5	27.4	3.3	31.2	32	
4.7	88.0	5.0	35.9	5.5	41.0	7.8	2.5	8.4	16.7	33	
13.9	53.2	13.6	44.3	15.5	51.1	20.1	49.9	27.6	37.8	34	
2.6	55.9	4.8	29.4	5.0	70.1	9.7	34.5	15.9	42.4	35	
22.5	603.1	27.3	306.4	28.0	495.7	46.6	441.9	70.3	432.6	36	
3.5	2.8	2.0	48.7	1.5	11.8	1.5	150.0	-----	-----	37	
14.3	14.4	12.7	30.6	9.0	15.9	5.6	30.0	4.2	16.7	38	
763,197	-----	545,239	-----	400,368	-----	268,011	-----	119,411	-----	-----	

<sup>1</sup> Figures for 1912 and 1923 are not comparable.

178.1 for all ages in 1912 to 110.5 in 1923. The mortality rate from this disease showed the greatest decline in the age period 35 to 44, when it went down 55.7 per cent. Mortality from pneumonia also showed the substantial reduction of 26.2 per cent, the rate in 1923 being only 92.5. The greatest decline in deaths from pneumonia occurred among the younger workers, in the age periods 25 to 34 and 35 to 44, the reduction amounting to 42.4 and 35.2 per cent, respectively. The fatal accident rate was reduced from 140.6 in 1912 to 121.2 in 1923, a decline of 13.8 per cent. Diseases of the heart showed little change for all ages, but changes in classification procedure have materially affected the comparability of the figures between the two periods. Heart disease, in spite of a decrease in the actual death rate, has become relatively more important owing to the much more rapid decline in the death rate from tuberculosis. In the years 1911-1913, 12 per cent of all the deaths were due to heart disease, while 15.4 per cent of all the deaths in the period 1922-1924 were from that cause.

Mortality rates for some of the lesser causes of death have markedly decreased, notably typhoid fever, cirrhosis of the liver, and suicide, while the effects of better industrial hygiene are seen in the 50 per cent decline in the death rate from chronic lead poisoning, a disease of almost exclusively occupational origin.

Exceptions to the general downward trend of mortality are found in the rise of the cancer death rate, the rate for influenza, and for automobile accidents. The death rate for cancer increased from 77.6 per 100,000 in 1912 to 94.9 in 1923, a rise of 22.3 per cent, the rates increasing 15.5 per cent and 30.6 per cent, respectively, in the important age periods 45 to 54 and 55 to 64. The influenza rate went up 157 per cent and the rate for automobile accidents almost 500 per cent, for all ages, between the years 1912 and 1923. Increases of a lesser amount were registered for diabetes and for homicide.

The influence of the occupation upon mortality rates is shown by comparison of these figures with those of males insured in the ordinary department of the company. The rates in the industrial department were higher for all causes, the death rates for tuberculosis, age period for age period, being two and one-half to nearly four times as high as among the professional, mercantile, and agricultural group. The pneumonia and accident rates are more than twice as high as among the nonindustrial workers, and the degenerative diseases—cerebral hemorrhage, nephritis, and organic diseases of the heart—are two and sometimes three times as high.

In the table preceding are shown the number of deaths and death rates among a group of industrial workers, in 1923, and the per cent of decline from the 1912 rates, by age groups.

In spite of the relatively unfavorable mortality of the industrial group, this group has exhibited a greater improvement, age for age, than has the general population, the decline in mortality for white males in the industrial group, 1912 to 1923, amounting to 27 per cent, while the reduction among white males in the registration States, 1911 to 1923, amounted to only 3.5 per cent.

### Conclusion

THE difference in death rates which the study has shown to exist between the insured industrial group on the one hand and males in the general population and among males insured under ordinary policies on the other (the disparity increasing from year to year up to about age 54) is considered to indicate that exposure to industrial hazards is cumulative in its deleterious effects. The study brings out sharply the wide variation that exists in the percentage distribution of the deaths from violence and the principal diseases in various occupations within the several age periods. When occupations with high percentages for a selected cause of death are brought together, a common industrial hazard is frequently found, thus suggesting that a definite cause and effect relationship exists between a given industrial hazard and a particular cause of death. A positive association is most clearly marked in the case of accidental violence, tuberculosis, the nontuberculous respiratory diseases, alcoholism, and such a strictly occupational disease, for example, as lead poisoning. The importance of more complete data and coverage is pointed out in the report. The lack of information regarding the number of living policy holders in the different age groups is a serious handicap which precludes the possibility of computing occupational death rates. Undoubtedly such death rates would be a much more accurate measure of the hazards to life in the various occupations than we now have. Consequently it would be highly desirable to obtain death rates classified according to age and cause of death for a much larger number of occupations than was covered in the study. The absence of trustworthy occupational mortality statistics in the United States hinders the work of industrial hygienists, and such a work as the present one can only partially overcome the lack of reliable data. It is urged that the Federal Bureau of the Census compile and tabulate data showing the mortality of workers engaged in different occupations. Every industrial hygiene worker, every physician, and every employer, as well as organized groups of doctors, employers, workers, and the general public, it is stated, should assist Census Bureau officials to gain helpful information and cooperate with them to the end that our knowledge of industrial hazards may be broadened, that the measures needed to eliminate them may be determined, and that the best program for conserving the health of workers may be put into effect.

## INDUSTRIAL RELATIONS AND LABOR CONDITIONS

### Conditions of Work in Spinning Rooms

IN 1926 the United States Women's Bureau published a study of labor turnover and lost time among woman workers in 18 cotton mills which showed, among other things, that the rates for both lost time and turnover were higher in the spinning rooms than in other departments of the mills. Conditions of work were mentioned as being among the possible causes for this situation. Recently the bureau has issued a new study, "Conditions of work in spin rooms," giving the result of an inquiry undertaken to see whether a connection could be established between certain definite conditions and the instability of labor in these rooms. Two lines of research were followed: A change in the methods of work in spinning rooms had recently been introduced in some mills, and the effort was made to see whether turnover and loss of time were greater or less under the new conditions than in rooms where the old methods still prevailed; and a study was made of temperatures in the spinning rooms to see whether any connection could be traced between these and the turnover and absence rates. The results of this second inquiry were entirely inconclusive:

It was found, however, that such temperature readings could not be correlated with absence and turnover figures, since too many other factors contributed to high or low rates. Therefore the records of the temperature readings in the spin rooms of 15 mills are given merely as a sample of temperatures under which women work in such rooms and not with the idea of showing the effect, if any, of these temperatures on absence or turnover.

### Change in Conditions of Work in Spinning Rooms

FROM the introduction of ring spinning up to recent times, doffing, or the replacement of full by empty bobbins, has been done by a special worker, and the rest of the process has been in the hands of the spinner, who joined the broken threads, cleaned the rolls and frames, and put in the roving. The doffer's work remains unchanged, but with the increasing desire for efficiency in production, the spinner's work has been divided into two jobs, spinning and cleaning. Under this plan the spinner joins the broken threads, while the cleaner keeps the machine free from lint and supplies the frame with roving. This subdivision lowered the cost of production without interfering with the quality of the product, but there has been much dispute over the relative advantages of the old and the new method, and the worker's attitude is of importance.

Under the old method a spinner tended from 6 to 10 sides; under the new she tends from 12 to 20, but she has not, of course, the same number of operations to

perform. Her helper or cleaner takes care of from 38 to 48 sides. The cleaner's work involves more walking than does that of the spinner, but it requires less care and skill and is not so well paid. Since cleaning is the less skilled job, a worker normally is promoted from that to spinning.

There is likely to be dissatisfaction with the new method when a worker who has been a spinner is put on cleaning. Though her earnings as a cleaner may be as high as those she earned as a spinner under the old method, her feeling of being demoted and of losing caste certainly will affect her attitude toward the new way of working. The very fact that it is a change would make some operatives oppose the new method, while others probably would be more than compensated by the higher pay received if they were spinners.

There are, it was decided, two ways in which the worker's attitude toward the old and the new method of working may be obtained. If the women find the new occupation more fatiguing than the old they probably will take more time away from their work, and if they dislike it very much or find it extremely exhausting, they will probably leave and look for new jobs. Thus, absence and an increased turnover may indicate to some extent the attitude of the workers.

Four mills were selected for study. In three of these the new and the old methods were in use at the same time in different rooms, while in the fourth records were taken for the same spinning room for 4 different periods, 2 when the old method was in use and 2 after the new method had been introduced. It was of course impossible to eliminate every difference between the rooms except the one item of method, but as far as possible all the known variables were taken into consideration. Only rooms working on the same count and quality of yarn in the same mill were compared. The results of the study are thus summarized:

#### *Lost time*

A lower per cent of lost time under the new method of spinning than under the old was found in two mills.

In Mill No. III, where 4 spin rooms were compared, 3 on the old method and 1 on the new, lost time under the new method was greater than in 2 rooms and less than in 1 room under the old method.

The fourth mill, after eight months' experience with the new method, had more time lost than under the old system.

The night shift showed a slight decrease in absence under the new method, more marked when it had been longest in operation.

#### *Turnover*

In two mills turnover was increased under the new method of spinning.

In the third mill, where 4 spin rooms were compared, the 1 under the new method had a higher turnover than 2 of the others.

In Mill No. IV turnover was much higher immediately after the installation of the new method than under the old, but it was lower under the new method than under the old after it had been in effect for eight months.

The night shift showed an increase in turnover under the new method of spinning both immediately after the change and eight months later.

### The Interview as a Factor in Improving Industrial Relations

AMONG a number of reports on the application of science to occupational adjustments, that were presented at the annual fall meeting of the Personnel Research Federation November 15 and 16, 1929, was one by a representative of a large electric company, on the

improving of employee relations.<sup>1</sup> Some of the outstanding points of the contribution are given below.

In making various studies of a test group of relay assemblers at one of the company's plants it was found that the major factor in increasing the effectiveness of these employees was the improvement in their mental attitudes. This suggested that a scheme for such improvement should start with a consideration of the workers' likes and dislikes. Accordingly, a plan was formulated for securing, analyzing, and applying their opinions on various subjects. About 10,000 men and women operators have already been interviewed and supervisory training is under way for 1,000 supervisors in this group. The following classification of the subjects of employees' comments, favorable and unfavorable, has been adopted:

Absence.	Light.	Social contact.
Advancement.	Lockers.	Steady work.
Aisles.	Material.	Temperature.
Club for employees.	Monotony.	Thrift.
Dirt.	Noise.	Tools and machines.
Fatigue.	Payment.	Transportation.
Floor.	Placement.	Vacation.
Furniture and fixtures.	Restaurant.	Ventilation.
Hospital.	Safety and health.	Washroom.
Hours.	Sanitation.	Welfare.
Interest.	Smoke and fumes.	Working space.

The above classification was worked out with a view to furnishing a good cross section of the workers' morale. Although the scheme of interviewing is as yet in the early stages of its development, the following summary is given of its values, as the author of the paper sees them:

1. The interviews have highly desirable effects upon the workers who have been thus accorded an opportunity fully to express themselves and relieve themselves of burdensome thoughts. This is evidenced by the occasional comments of supervisors that after these interviews such employees are more easily supervised. Workers themselves have reported that they felt better after having such an interview. Furthermore, it is probable that an interview increases the morale of an employee because of the reassurances he receives that the management desires to improve his surroundings and because he feels that he is of sufficient importance to be asked what he thinks on these various matters.

2. The company secures information by this method which it does not otherwise obtain, such information constituting a basis for the study of employee relations and the improvement of the conditions of the plant. The first-hand expressed reactions of the workers regarding the company's personnel activities, for example, thrift schemes, sick benefits, pension plans, vacations, etc., are considered especially valuable.

3. The very operation of the interview plan results in improved supervision. Various employees have commented on such improvement. It seems quite natural that a supervisor who realizes that his workers are going to be able to report confidentially as to what they think of him will be more careful about his manner of dealing with them.

<sup>1</sup> The Personnel Journal, New York, February, 1930, pp. 314-325.

4. The supervisory training made possible through employees' comments greatly surpasses any of the company's previous training programs. The supervisors themselves are reported as exceedingly interested in the plan under which their subordinates can criticize them freely without fear, and the criticism of one supervisor can be utilized for the benefit of others who are being trained.

Finally, these interviews have convinced the management that the relation between the first-line supervisors and the individual worker is of greater importance in connection with the attitude, morale, general happiness, and efficiency of that worker than any other one factor. "We believe," the representative of the company says, "we have progressed further in the knowledge of employee relations during the short time this plan has been in operation than in all the previous years of the company's existence."

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### Manufacturing Processes in Carpet and Rug Weaving

IN A lecture delivered by the educational director of the Mohawk Carpet Mills, on "The Art of Rug Weaving," descriptions were given of the various steps in the manufacture of different kinds of woven floor coverings. The following information is taken from this lecture.

#### Spinning Wool Yarn

THE wool used for carpets, it was said, must come from sheep that live outdoors in the mountains the year round; this is necessary in order that the wool may acquire fiber resilience or elasticity, luster, length of staple, and the proper fulling properties. To spin a woolen yarn it is advisable to use staple which averages perhaps 4 inches in length. First the wool is put through openers and dusters and then through pickers to remove foreign matter, such as sand, seed, burrs, twigs, and leaves, which naturally gathers in it. Next it is "fed through scouring machines by a rake system which gives it three scouring baths, between squeeze rolls, or wringers, and rinsing water, and then through a hot-air dryer." At this stage, large batches of the wool, combining perhaps 25 to 40 types of staple from many different lands, are thoroughly mixed and then allowed to age or absorb moisture for several weeks to acquire "just the right characteristics that experts in spinning deem necessary for the particular weave in which it will be used." It is then fed through the carding machines, which are sets of rollers bearing fine wire points revolving against each other, "to put the wool fibers somewhat in parallel." These fibers are separated on the doffer roll or delivery end of the card into strips about an inch wide, and are rubbed by two leather rolls or aprons into a roving, about as one would roll a pencil back and forth between the palms of the hands. This roving is wound on spools which are attached to the top of the woolen spinning frames and threaded to bobbins on the traveling carriage at the front.

The carriage on wheels will pull out about 6 feet, draw each of the several hundred roving ends to a predetermined size, and twist and spin by flipping over the tops of the bobbins. As the carriage returns to the frame proper, it will wind up the yarn. As a result of this persistent drawing, twisting, spinning, and winding on what is commonly called a "mule," we have a soft wool yarn.

The fibers run from the very shortest to 6 or more inches in length and are laid rather mixed or criss cross in the yarn to give it all the resilience possible. Woolen yarn is rather rough and bulky, allowing for weaving a heavy pile carpet or rug and the shortest fibers will work out to some extent, commonly known as "fuzzing."

### Spinning Worsted Yarn

WORSTED yarn is spun from selected long staple on flyer spinning frames (not mules) after the fibers under three-fourths of an inch or some such set length are combed out. The longer staple comes to worsted-type carding machines which have fewer and larger rolls of wire clothing, because it is easier to put these longer fibers in parallel. Worsted staple is delivered in a sliver or rope form, being kept separate as to source and character. "These slivers—16 or 18 ends to mix it thoroughly—are then fed into gill boxes five or six times and the balls of worsted 'top' thus obtained are laid up in storage for from six weeks to three months," for the purpose of "ageing" or "mellowing"—allowing them to absorb needed moisture in order to remove the natural static electricity.

The slivers are then mixed on gill boxes to bring into the worsted yarn the desired features of each staple in proper proportion. Wound on 18 spools four slivers wide and fastened around the circular carriage of the Nobel combing machines, we see it feeding into this ingenious device as the carriage revolves slowly on a horizontal plane. At two central points, the fiber under three-fourths of an inch, or some similar set length, is combed out and drawn by air suction up a tin tube to a baling press. This short fiber is called "noils," \* \* \*. The fibers from three-fourths of an inch to the 17-inch length are given a slight twist and wound into circular receiving cans.

These ropelike fibers are then drawn down into a fine yarn on roving frames, under friction wheels running at different speeds. After five or six drawings the yarn is spun similarly into a yarn on the worsted spinning frames, which employ the constant revolving flyers to get the necessary twist. The result is a fine, wiry yarn without any short stock in it, as compared with the wool yarn, in which the shortest staple is purposely retained.

The next step is to scour out the animal grease which has adhered to the wool in spinning, almost the same process being used as for wool. After being thoroughly immersed in several scouring solutions and rinsing waters and passing through wringers, the yarn is put through immense hot-air agitation dryers.

The speaker stated that worsted yarns require more expensive staple, take five times longer to spin, and require 30 more mill operations than the woolen yarns. "Worsted yarn, therefore, costs approximately one-third more per pound than woolen."

From 2 to 6 ply are twisted for use in weaving floor coverings, in the case of both woolen and worsted yarns. For Axminster, Wilton, and Chenille fabrics the yarns are wound in skein form for dyeing; for tapestry and velvet they are wound on spools, "as these yarns will later be colored on large printing drums."

### Dyeing Pile Yarns

IN DYEING yarns the skeins are hung over cedar poles on a carriage which is raised by hydraulic lift over a cypress kettle which contains a solution of aniline dye. The yarn is boiled in this solution, with the cover of the kettle fitted tightly, being violently agitated back

and forth in the dye tub. "Wool fiber and aniline dye have an affinity. The color is not applied to the outside of the staple but is actually absorbed, adding to the weight of the fiber." To ascertain if the proper shade has been reached, the dyer raises the yarn from the bath and cuts a few strands, drying them quickly and matching them to a standard. If too light, the yarn is put back and boiled longer or more dyestuff is added. If the yarn takes on too dark a shade it may have to be dyed black. When the shade desired is obtained, the yarn is put through a "whizzer or hydroextractor" to remove the excess dye liquor and is then conveyed through huge hot-air agitation dryers.

After the yarn is spun for the pile or surface of different weaves it is necessary to provide a warp and filling yarn to bind the pile yarn to the back—or form the back. Cotton, which is a light and strong fiber, is used for this purpose.

Beginning with the raw wool, approximately three months are required to produce a finished rug or carpet.

### Designing of Patterns

To OBTAIN a pattern for a rug 9 by 12 feet in size, "a designer may work seven or eight weeks at his easel filling in over 1,900,000 squares on a prepared check paper. \* \* \* These tiny checks are about one-twelfth of an inch square, yet they must be in the proper place to assure a perfect geometric pattern, and must have the proper shade selection to assure color harmony."

### Wilton Types of Weave

THE paper pattern is cut into different shapes according to the weave to be undertaken. For the 27-inch width of Wilton weave it will be cut 9 inches wide and taken to a card-stamping girl. Following a horizontal or weft line of squares this girl "will manipulate about 400 steel punches on a press faster than you can see her fingers move. She will cut holes in strips of cardboard about 3 by 17 inches in size. Actually, she is cutting five holes to get a blank, for it is the blank spaces which assure the pattern on the loom. In seven or eight weeks of work this girl will provide over 23,000 cards for a 9 by 12 foot rug pattern. The cards will then be laced together. This chain of pattern is run through duplicating machines which will provide a similar pattern in less than a day's time. These and other recent wonderful inventions are powerful factors in bringing the cost of Wilton fabric within the purchasing range of the average American home."

The pattern cards are arranged three wide (three times 9 inches), providing 27 inches of weave on the loom. These cards push about a half inch into the mechanism at the top of the loom. The blank space will push its particular wire back, so that a drop-cord bearing a knot will catch in the back or crotch of the tiny hole in the lift board, thus "calling up" one yarn over the pile wire in the weave below. The holes in the pattern card allow the governing wires to come through when pushed forward. As nothing happens to these several drop-cords, their knots slip through the larger holes in the lift board and their yarns stay down to be buried in the body of the fabric. This device was the historical creation of Joseph Marie Jacquard and his wife. \* \* \* It has since been used in the manufacture of almost every textile in every civilized land, and has never been changed in basic principle.

The Jacquard device calls for a strand and color of yarn for pattern in much the same manner as the music roll of an automatic piano player would demand a certain note of music. Back of the loom are the five or six frames or trays of yarn, each frame of a different color, all coming into the loom in parallel. The pattern cards demand that one tuft of yarn come to the surface over the pile wire to form the fabric and the desired design, while the other yarns are woven into the back, forming the hidden value—the concealed quality—or the cushion back of a genuine Wilton. When a round wire is used and pulled out, leaving an uncut loop of worsted yarn, we obtain a Brussels fabric, named for the city where the loom was first shown. When a flat wire with a cutting knife (a safety razor blade) fastened to the end is used to cut the loops when extracted, and thereby give a plush effect in the fabric, we have Wilton, named for the little town in England where this process originated.

For many years Wilton carpet was limited to 27 inches in width. To-day, "after many years spent in research, we find great 16-ton fully automatic looms weaving Wiltons 9 feet wide in quantity and up to 15 feet seamless, with the possibility of going even wider." In a 9-foot Wilton loom and a 5-frame construction like the Imperial Karnak, 9,620 ends of yarn are needed, and each must be threaded through the proper lingoe wire and space in the reed before the loom can be started. The pattern device must be completely changed, "and we see the obverse of the narrow loom, or what is known as the small index. In other words, this wider loom demands the yarn by use of a small hole rather than a blank space. Four blanks on the card push, in this instance, and they push back hooks at the top of the loom so that the remaining hook, not so pushed, will catch on a lift rod and raise the desired yarn in the weave below."

When the fabric is removed from the loom it is burled, that is, missing tufts are restored or yarn knots removed, since a power loom does not produce perfect fabric, although the lecturer pointed out that it is quite remarkable how few mechanical or personal errors happen "when there is a possibility of nearly 2,000,000 occurring in each rug." The fabric is next sheared two or three times by a revolving knife "rather similar to a lawn mower," then thoroughly vacuum cleaned and subjected to a live steam bath before inspection, baling, and shipment.

#### Tapestry and Velvet Weaves

TAPESTRY and velvet rugs are to-day woven to a width of 15 feet. One yarn, rather than five or six, is used and the dyestuff is printed on the yarn itself so as to contribute its share of the pattern.

The natural yarn is wound 330 turns around a great drum, which may be 38 feet in circumference. The pattern paper, 4 or 5 inches wide and in the 12-foot length, is brought from the design studio and varnished to a board for preservation. The drum printer will follow a vertical or warp line of squares and when the top square calls, for example, for brown, the printer will set the drum at the No. 1 stop on the brass rim of the drum. Releasing a car of aniline dye in wheat-flour-paste form, he will print a stripe of brown across all the 330 yarns. Following the pattern paper down the row of little squares he will print all the brown demanded, and in the right place. Changing the car for each color, he will proceed until all colors needed are printed. In weaving 9 feet wide on a loom, 400 yarns may be required—which means that 400 drums of yarn will have to be printed, possibly requiring eight weeks of work.

This yarn is removed from the drum, the dye is set by steam, and the wheat flour is washed out before it becomes thoroughly dry. Each yarn, wound on a spool, is placed in proper order on a creel and drawn between two girls—tapestry setters—who set the yarns every few feet so that the pattern can actually be seen in the yarn surface. Of course, this pattern is peculiar because it is 38 feet long

and will be shortened up to 12 feet over the pile wires in the weaving. Jute yarn is sized for weight and strength, and usually stained, for use as a stuffer warp yarn in these cheaper weaves.

The tapestry looms are of the ordinary cloth-weaving type and do not have a Jacquard or other pattern device. These looms, it is said, were used during the war to weave burlap and canvas "just as readily as floor coverings." Every yarn is raised every time, automatically and fast. Over a round wire, the tapestry weave is obtained, an imitation of Brussels; by using a flat pile wire with a knife blade attached the plush effect of the cut loops gives the velvet constructions. This latter fabric is sometimes called Wilton velvet, although incorrectly so, as "a Wilton requires the use of the Jacquard pattern device and contains buried yarn. A Wilton always has from two to six frames of yarn, but is not limited to any sense to a like number of colors, as some people maintain. Any number of colors can be employed—12 to 30 are quite common in the 5 and 6 frame; even with 6 to 8 in a  $3\frac{1}{2}$  frame construction."

According to the speaker, tapestry and velvet fabrics meet the requirements of many families of limited means, their low cost being possible "because they are lighter in weight and are woven much faster than other types."

#### Axminster Weave

**AXMINSTER** carpet is woven "up to 15 feet and 18 feet wide seamless, and may go wider." In the process of weaving, yarn of the colors desired is placed on spools. These spools are arranged on a delivery table, "agreeable to a horizontal or weft line of squares on a pattern paper cut 27, 36, or 54 inches wide, according to the width or multiple desired." The yarn spools are placed in proper position by two workers, the yarn is pulled through a reed, and a determined yardage wound on spools. In several weeks these two workers "will provide perhaps over 1,600 loom spools, which are threaded through guiding tubes, fastened into tube frames, and hung in a continuous sprocket chain on a modern Axminster seamless type of 9-foot loom."

Propelled by a small direct-drive built-in motor, this chain moves forward and great steel arms lift a row of spools from the chain, bring the many yarn ends down into the weave shed, bind them into the fabric, turn the ends up, and cut both strands off about three-fourths of an inch long. Restoring this particular row of yarn, the arms reach the next row and repeat the process. The great needle with jute yarn binds the surface yarn into position and also supplies the shots of jute yarn for filling and warp.

It is beaten up from 4 to 14 shots to the inch and these can be very easily measured and counted in the number of double jute strands on the back. The pitch, seven tufts wide to the inch, is practically standard in America. The comparative qualities can thus be judged by the character of yarn, the cut or thickness of fabric, and particularly the shots to the inch in weave.

#### Chenille Weave

**IN PRODUCING** chenille two looms are necessary, the first weaving the weft cloth or blanket and the second weaving the rug. This is said to be the only weave in the world in which the pattern and design are obtained in the weft form, as the chenille cord or fur will develop the design. "While Wilton and Axminster may be manufactured in minimum multiples of 150, tapestry and velvet in multiples of 330, it remains for chenille to be custom-made exactly to a customer's

wishes. It is not commonly woven as a stock proposition or sold to the retail trade in quantity, save in large rolls of plain fabric for cut order purposes. It is sold from catalog suggestions and quality swatches only." Chenille is woven up to 30 feet in width seamless, to any reasonable length, and in any shape, design, and thickness up to an inch and a half if desired.

The pattern paper for chenille weaving is cut one square wide with a hand trimmer and hinged into one continuous strip. The first, or weft cloth weaver, following this strip of paper will put a shuttle of wool yarn (of a color to correspond with the design paper) across the loom and back. This blanket is then cut into strips and ironed into a V shape forming a "hairy caterpillar," which gives the fabric its French name of chenille. This caterpillar is tied endless in imitation of the design paper provided, and is brought over the back of the second, or rug-weaving loom to be carried into the weaving shed by a traveling finger motion. Weavers catch this weft cord at either end, straighten it up, place it for pattern position and comb it into place. When the loom is started the beater reed completes the work of hand tufting and the shuttle of heavy wool yarn weaves the back of the rug and the necessary filling between the rows of chenille. We then have regular rows of chenille fur woven upon a heavy wool back or cushion and firmly bound into position by a catcher warp of combed Sea Island, the strongest cotton yarn possible to spin.

### Labor Cost of Producing Crops on Irrigated Farms in Colorado

FOR a number of years the Colorado Agricultural College Experiment Station, in cooperation with the United States Department of Agriculture, has been collecting data on the cost of producing crops on irrigated farms in Weld County, Colo. A report on the results of the study was published in the latter part of 1929, the data covering principally the years 1922 to 1927, although certain information is given for 1928.<sup>1</sup>

Costs of production, including man-labor cost, were worked out for all of the different crops grown on the farms selected for study. The important crops in that region were alfalfa, potatoes, sugar beets, barley, wheat, oats, and beans. Some of the cost data in connection with these crops are given in the following table, compiled from the report.

AVERAGE YEARLY COST OF PRODUCING SPECIFIED CROPS ON IRRIGATED FARMS IN WELD COUNTY, COLO., 1922 TO 1927

Item	Pota-toes	Sugar beets	Barley	Alfalfa	Pinto beans *	Seed beans †	Oats	Wheat
Acres in crop harvested...	28.91	36.08	24.08	48.65	10.21	16.54	13.37	19.21
Yield per acre, pounds...	11,461	* 14.92	2,337	* 2.47	662	1,084	1,969	2,635
Accounted for per acre, pounds...	9,308							
Waste per acre, pounds...	2,153							
Man hours per acre...	53.44	40.69	14.10	16.17	38.53	37.35	13.6	13.79
Horse hours per acre...	81.10	83.99	21.05	20.46	47.57	43.04	19.6	18.81
Tractor hours per acre...	.46	.71			.30		.06	.10
Costs per acre:								
Man labor	\$17.80	\$13.01	\$4.63	\$5.35	\$12.40	\$12.63	\$4.52	\$4.84
Horse labor	\$11.31	\$11.20	\$2.89	\$2.92	\$6.26	\$6.95	\$3.06	\$2.90
Tractor	\$0.46	\$0.71	\$0.49		\$0.50		\$0.04	\$0.10
All other costs <sup>‡</sup>	\$60.60	\$63.31	\$29.49	\$24.38	\$33.12	\$34.49	\$30.90	\$30.57
Total costs...	\$90.26	\$88.23	\$37.50	\$32.65	\$52.28	\$54.07	\$38.52	\$38.41
Loss per acre...	* \$13.63	* \$25.50	\$7.75	\$4.22	\$23.58	\$2.67	\$9.35	\$1.55

\* Mexican beans. Data are average of years 1924 to 1927.

† All varieties of beans grown under contract for seed houses. Data are average of years 1924 to 1926.

‡ Tons.

<sup>‡</sup> Including such items as equipment, buildings, taxes, threshing, seed, manure, etc.

• Profit per acre.

<sup>1</sup> Colorado Agricultural College. Experiment Station. Bulletin 333: Cost of producing crops on irrigated farms, by R. T. Burdick and H. B. Pingrey. Fort Collins, 1929. 72 pp.

### Labor on Hawaiian Sugar Plantations

LABOR conditions on sugar plantations in the Territory of Hawaii were especially good during 1928, according to the annual report of the Governor of the Islands for the fiscal year ending June 30, 1929. The report also states that the Filipinos on these plantations are continuing to prove themselves quite desirable workers, and are becoming more and more adapted to the Hawaiian labor system. Over three-fourths of the Filipinos in the Territory are on sugar plantations. The race and sex of some 50,000 of these workers, employed on 41 plantations of the Hawaiian Sugar Planters' Association are shown in the accompanying table.

TABLE 1.—NUMBER AND RACE OF EMPLOYEES ON 41 PLANTATIONS, JUNE, 1929

Race	Number on pay roll	Race	Number on pay roll
Males:		Females:	
American.....	1,269	Japanese.....	1,472
Japanese.....	9,197	All other.....	261
Filipino.....	34,345	Total.....	1,733
Chinese.....	946		
Korean.....	520	Minors:	
Porto Rican.....	810	Regular, males.....	409
Portuguese.....	1,682	Regular, females.....	52
Spanish.....	76	School.....	4,889
Hawaiian.....	574	Grand total.....	56,662
All other.....	160		
Total.....	49,579		

At the close of December, 1928, the sugar industry reported 19,685 separate structures owned and maintained by the sugar plantations for the housing of workers and their families. The value of such housing is conservatively estimated at \$14,000,000. Table 2 gives some data on the numbers accommodated in these dwellings.

TABLE 2.—NUMBER OF PERSONS HOUSED IN COMPANY DWELLINGS ON 42 HAWAIIAN SUGAR PLANTATIONS, DECEMBER 31, 1928

Civil status	Number housed				Number of houses <sup>2</sup>
	Men	Women	Children <sup>1</sup>	Total	
Married group.....	14,732	13,511	36,566	64,809	13,002
Single group.....	35,462	602	94	36,158	6,683
Total.....	50,194	14,113	36,660	100,967	19,685

<sup>1</sup> Under 18 years of age.

<sup>2</sup> Separate structures.

Recent statistics compiled by Hawaiian savings banks indicate that the savings bank deposits of some 11,800 Filipinos amounted to more than \$2,600,000. Substantial sums of money are sent back by these workers to the Philippines. Furthermore, large numbers of them leave the Territory and carry considerable money with them. The Filipino arrivals in Hawaii by steerage, however, greatly outnumber the departures from the Territory, as shown in Table 3.

TABLE 3.—ARRIVALS AND DEPARTURES OF STEERAGE PASSENGERS, HAWAII, YEAR ENDED DECEMBER 31, 1928

Race	Arrivals			Departures			Increase (+) or decrease (-)		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Chinese	335	76	46	657	137	109	-322	-61	-63
Japanese	1,594	1,042	476	1,983	1,190	957	-389	-148	-481
Filipinos	11,628	201	139	5,337	456	702	+6,291	-255	-563
Koreans	8	5	8	25	11	7	-17	-6	+1
Porto Ricans	7	6	7	17	11	13	-10	-5	-6
Portuguese	65	15	13	68	20	21	-3	-5	-8
All others	106	19	13	109	12	8	-3	+7	+5
Total	13,743	1,364	702	8,196	1,837	1,817	+5,547	-473	-1,115

### Occupational Analysis of Borrowers from Small-Loan Companies

IN THE latter part of 1929 an investigation of the small-loan situation in New Jersey was made under the auspices of the New Jersey Industrial Lenders' Association, which has recently published a report of the survey.<sup>1</sup>

The statistical part of the study was confined to the small-loan companies operating under a law of 1914, but general inquiries were made concerning other companies making small loans. The report discusses the practices of three classes of institutions in the State which make such loans, in addition to the so-called small-loan companies—the Morris plan banks, the Wimsett thrift and loan companies, and commercial banks.

#### Commercial Banks

COMMERCIAL banks in New Jersey as a rule specialize in loans for business purposes only. Although some loans are made for personal needs, these are an unimportant part of the banks' business and few of them are interested in making loans as small as \$300. When these banks do make small loans, according to the report, they make them only "to regular customers of the bank, to persons owning real estate or readily marketable collateral such as stocks or bonds, or to persons who present notes indorsed by property owners of standing. Furthermore, they rarely lend money on a personal note unless the borrower has been personally known to the officials of the bank and has an established reputation for character and integrity." In most of the cities of the State, commercial banks are said to be loath to lend any money to the ordinary workingman or salaried employee even if his note is indorsed by a well-to-do friend, and in most cases will not even consider an application coming from a person who is not a depositor in the bank. The rates charged by these banks usually do not exceed 6 per cent per year.

<sup>1</sup> New Jersey Industrial Lenders' Association. *The Small-Loan Situation in New Jersey in 1929*, by Willford Isbell King. Trenton, 1929.

### Morris Plan Banks and Wimsett Thrift and Loan Companies

MORRIS plan banks specialize in small loans secured by personal notes indorsed by comakers who are property owners. The rates charged are much higher than those of commercial banks, but have tended to be somewhat lower than those of the small-loan companies. The Wimsett thrift and loan companies also make small loans on personal notes secured by indorsers, their rates being 3 per cent a month for the first 4 months of a loan due in 10 or 12 equal monthly installments. No interest is charged after these 4 months until the loan is paid off, provided the installments are paid promptly when due, and if the installments are paid on time the borrower receives a refund of \$2.20 per \$100 of the loan when the final installment is paid. But if the borrower is delinquent in making his payments, the rates charged are higher and "may even reach 3 per cent per month," according to the report.

### Small-Loan Companies

SMALL-LOAN companies are permitted to lend amounts up to \$300 to any one borrower, at a rate not in excess of 3 per cent per month on unpaid balances.<sup>2</sup> To prevent a borrower from having loans with several companies simultaneously, the small-loan companies have set up a series of exchanges through which the member companies can find out whether an applicant for a loan is then borrowing from any other small-loan company.

Small-loan companies are said to lend almost exclusively on the security of a mortgage on household furniture signed by husband and wife, most of them making loans only to married men living with their wives. The companies are forbidden by law to charge fees or fines of any kind.

The report states that the law under which the New Jersey small-loan companies operate was a pioneer statute that has since been adopted with some changes by the majority of the States.

The advantages of borrowing from these small-loan companies, as set forth in the report, are: The money can be obtained promptly with little red tape; the loan can be paid off whenever funds become available; interest is not taken out in advance but accrues only on unpaid balances and is not compounded; no one but the borrower and his wife need to know that the money has been borrowed; and it is unnecessary to ask favors of anyone outside the family. Many persons desiring loans, therefore, prefer to pay the higher rates charged by the small-loan companies rather than comply with the requirements of the commercial banks, Morris plan banks, or the Wimsett thrift and loan companies, even if they are able to do so. Many a workingman would be unable to get a well-to-do person to indorse his note, and others who might obtain indorsers feel that it is embarrassing, injurious to their interests, or humiliating to ask favors which might be granted with reluctance. However, the small-loan companies investigate the financial status of each would-be borrower, and loans are granted only to persons who have the necessary income and also the reputation for honesty and willingness to pay.

<sup>2</sup> Under an act approved May 6, 1929, effective Feb. 15, 1930, the maximum rate which small-loan companies may charge is reduced to 1½ per cent per month on unpaid balances.

The number of borrowers from small-loan companies in New Jersey on November 30, 1928, is reported to have been 111,900, the outstanding loans totaling about \$19,000,000. It is estimated that there were in New Jersey in 1928 some 800,000 married men, and since the small-loan companies as a rule make loans only to married men it would appear that approximately one married man out of eight was a borrower from these companies.

### Occupational Distribution of Borrowers

IN THE study under review, 29 sample small-loan companies were selected for study and an attempt was made to classify all borrowers on an occupational basis. Reasonably accurate information is said to have been obtained from 28 companies reporting for 23,716 borrowers. Table 1 shows, by occupation, the number of borrowers, the average monthly family income, and the average amount borrowed. Both open and closed accounts were included in the tabulation, but only those borrowers were included for whom records of occupation, size of loan, and family income were all reported.

TABLE 1.—NUMBER OF BORROWERS FROM 28 SMALL-LOAN COMPANIES, IN NEW JERSEY, AVERAGE MONTHLY FAMILY INCOME OF BORROWERS, AND AVERAGE SUM BORROWED, BY OCCUPATIONAL CLASS

Status and occupation of borrower	Number of borrowers	Average monthly family income of class	Average sum borrowed
All occupations	23,716	\$168.46	\$169.81
Employers and self-employed			
Nonprofessional			
Agents	4,965	186.79	201.50
Barber shop and bathhouse proprietors	4,709	185.93	200.68
Boarding-house keepers	74	232.66	217.91
Building contractors, including employing carpenters, plumbers, painters, etc.	155	183.65	200.23
Dressmakers and milliners	244	161.13	182.43
Electricians, etc.	1,103	195.54	195.34
Farmers	89	136.51	157.02
Fishermen and boatmen	76	209.54	192.83
Florists, nurserymen, etc.	25	152.65	186.41
Garage and filling-station proprietors	44	166.81	204.57
Merchants	94	165.02	238.46
Hotel or restaurant keepers	748	187.56	216.66
Jewelers (proprietors)	182	227.84	242.20
Mechanics (proprietors)	15	155.33	251.67
Realtors	84	206.70	197.74
Shoe repairers	104	192.15	254.66
Stock brokers	76	185.87	208.29
Tailor-shop proprietors	8	337.50	238.75
Taxi drivers	113	195.93	200.64
Truckmen	96	183.85	200.32
Unclassified	206	170.87	186.38
Professional	842	183.85	192.15
Accountants and auditors	256	202.72	216.66
Architects, etc.	12	303.33	268.42
Artists, designers, etc.	10	206.10	287.50
Authors, editors, etc.	14	245.00	243.86
Dentists	2	150.00	265.00
Druggists and chemists	13	355.76	284.61
Educators	17	211.17	261.76
Engineers, surveyors, etc.	26	185.19	179.42
Entertainers	9	186.67	211.11
Nurses, etc. (independent)	18	230.56	203.33
Physicians, osteopaths, etc.	60	143.80	166.16
Lawyers, abstractors, notaries, etc.	36	256.89	229.17
Undertakers	18	124.44	240.28
Unclassified	4	205.00	207.50
	8	171.90	272.50

TABLE 1.—NUMBER OF BORROWERS FROM 28 SMALL-LOAN COMPANIES, IN NEW JERSEY, AVERAGE MONTHLY FAMILY INCOME OF BORROWERS, AND AVERAGE SUM BORROWED, BY OCCUPATIONAL CLASS—Continued

Status and occupation of borrower	Number of borrowers	Average monthly family income of class	Average sum borrowed
Employees	18,751	\$163.52	\$161.42
Professional	838	218.10	210.32
Accountants and auditors	58	271.47	234.14
Actors and entertainers	7	446.71	155.00
Architects	12	231.33	183.75
Army and Navy officers	2	282.50	300.00
Artists, designers, sculptors	22	172.05	239.54
Chemists, assayers, etc.	34	206.94	193.59
Clergymen	58	141.53	186.98
Editors, reporters, etc.	24	238.42	188.96
Engineers, technical	104	271.55	214.28
Judges, lawyers, etc.	11	148.64	243.64
Musicians	41	199.07	165.49
Officials, governmental and institutional	42	244.79	217.98
Secretaries and organizers	22	231.27	215.23
Statisticians	6	242.84	200.83
Teachers	322	207.98	221.98
Unclassified	73	189.92	181.10
Managerial	1,350	204.40	191.56
Superintendents and managers	356	259.75	223.03
Foremen, floorwalkers, etc.	639	188.41	177.42
Officers of vessels	26	199.35	182.88
Others	329	176.17	185.64
Agents, solicitors, and commercial travelers	1,132	201.47	202.78
Salespeople	341	144.82	162.30
Clerical employees	1,385	159.05	171.47
Accountants, bookkeepers, and cashiers	221	177.43	189.32
Post-office clerks and mail carriers	199	158.75	173.10
Shipping clerks	130	144.65	148.88
Stenographers, typists, etc.	40	141.08	162.00
Telephone operators	41	120.06	137.80
Telegraphers	29	181.41	190.69
Other clerical	725	158.41	171.35
Guardians of public safety	682	171.39	168.95
Firemen	178	187.52	163.23
Policemen and watchmen	426	165.05	172.88
Soldiers, etc.	6	150.50	147.50
Others	72	170.81	161.61
Manual workers	11,229	157.29	151.83
Bakers	82	171.50	177.34
Building workers	2,051	183.13	161.00
Butchers	84	157.61	181.68
Chauffeurs, taxi men, etc.	326	156.51	147.43
Electricians	231	183.18	175.47
Expressmen and truckmen	1,221	142.65	147.63
Factory workers, skilled and semiskilled	2,303	163.04	156.75
Factory workers, unskilled	1,427	128.00	130.98
Fishermen and sailors	38	136.92	143.61
Garage employees and mechanics	363	155.52	151.83
Gardeners, agricultural laborers, etc.	162	122.09	143.64
Messengers	9	154.67	130.00
Miners	3	166.00	116.67
Shovelers and miscellaneous laborers	923	130.93	131.45
Telephone linemen, etc.	108	162.12	154.46
Railway trainmen and yardmen	540	178.61	161.92
Road and street builders	32	146.84	174.22
Stevedores, car loaders, etc.	57	156.23	132.21
Street-car conductors and motormen	71	154.68	144.01
Street cleaners	31	122.03	121.35
Printing trade	208	186.78	175.26
Unclassified	961	158.92	160.43
Servants	1,794	127.15	138.98
Barbers and hairdressers	102	147.69	170.61
Chauffeurs, etc.	105	139.30	154.59
Cooks	176	147.30	152.16
Elevator operators, bell boys, etc.	54	134.52	123.61
Housemaids, etc.	346	108.79	119.10
Janitors, firemen, etc.	302	127.53	147.86
Launderers and cleaners	231	119.40	125.18
Nurses and midwives, unskilled	59	140.71	155.34
Porters	166	116.73	124.39
Waiters, etc.	150	144.20	162.78
Unclassified	103	118.30	128.43

One-fifth of all borrowers were either employers or self-employed persons, and the remaining four-fifths were employees. Of the total number of borrowers, 19.86 per cent were business men; 4.62 per cent were professional men; 5.69 per cent were in the managerial class; 6.21 per cent were agents and salespeople; 5.84 per cent were clerical workers; 2.88 per cent were guardians of public safety; 47.35 per cent were manual workers; and 7.55 per cent were classed as servants, although some occupations were included under the head of servants which are not commonly so regarded, such as barbers and hair-dressers, nurses, etc.

It will be noted that the largest loans were taken out by persons in the professional class, business men and those in the managerial group coming next. The largest amount was borrowed by two men classified as Army and Navy officers, who borrowed \$300 each. The smallest loan recorded for a single occupation was \$119 for housemaids.

#### Reasons for Borrowing

TABLE 2 gives the number and per cent of borrowers, grouped under five main occupational heads, reporting each specified reason for negotiating a loan with companies from which adequate information on this point was obtained. Both open and paid-up accounts were included. Borrowers for whom occupations were not reported were not included in this tabulation.

The reasons most frequently given by all groups for wishing to borrow were the liquidation of existing debts and the payment of current household and other expenses. These two reasons accounted for over two-thirds of the loans negotiated by the total group of 15,830 borrowers. Approximately one-third of the loans negotiated by nonprofessional business men were for business expenses, while less than one-fourth of the loans made to self-employed professional men were for this purpose. Loans to meet the expenses of illness or death were more frequent among clerks and manual workers than in the other occupational groups.

TABLE 2.—NUMBER AND PER CENT OF BORROWERS IN EACH OCCUPATION GROUP, BY REASON FOR DESIRING LOAN

#### *Number of borrowers*

Reason assigned for making loan	Employers or self-employed		Employees			Total
	Non- profes- sional	Profes- sional	Profes- sional	Cleri- cal	Man- ual	
All reasons.....	3,257	172	541	2,753	9,107	15,830
Expenses arising from illness or death.....	147	9	52	355	1,172	1,735
Funeral expenses.....	8	-----	1	18	85	112
Confinement expenses.....	3	-----	1	11	58	68
Other payments to physicians, dentists, and hospitals.....	136	9	50	326	1,034	1,555
Liquidation of other debts.....	957	58	174	957	2,979	5,125
Consolidation of several debts.....	432	30	84	487	1,454	2,487
Payments on automobile.....	41	-----	13	80	266	400
Payments on home or home site.....	99	8	22	98	287	514
Insurance.....	15	2	3	16	44	80
Taxes.....	210	10	27	129	542	918
Others.....	160	8	25	147	386	726

TABLE 2.—NUMBER AND PER CENT OF BORROWERS IN EACH OCCUPATION GROUP, BY REASON FOR DESIRING LOAN—Continued

*Number of borrowers—Continued*

Reason assigned for making loan	Employers or self-employed		Employees			Total
	Non-professional	Professional	Professional	Clerical	Manual	
Business expenses.....	1,070	40	17	143	324	1,504
To assist friends or relatives.....	40	1	9	45	153	248
Current expenses.....	799	55	249	1,012	3,655	5,770
Christmas gifts.....	31	2	7	28	178	246
Clothing.....	19	1	8	52	225	305
Coal.....	36	1	3	38	226	304
Furniture and house furnishings.....	38	2	8	57	235	340
Moving expenses and rent.....	74	4	12	70	351	511
Repairs on automobile.....	15	3	2	23	72	115
Repairs on home.....	124	6	30	100	330	590
Travel and vacation.....	17	3	41	54	138	253
Wedding expenses.....	7	—	—	7	22	36
Household and miscellaneous.....	438	33	138	583	1,878	3,070
Combination of purposes.....	227	9	34	215	780	1,265
Miscellaneous.....	17	—	6	26	44	93

*Per cent of all borrowers*

All reasons.....	100.00	100.00	100.00	100.00	100.00	100.00
Expenses arising from illness or death.....	4.51	5.23	9.62	12.89	12.86	10.96
Funeral expenses.....	.24	—	.19	.65	.93	.71
Confinement expenses.....	.09	—	.19	.40	.58	.43
Other payments to physicians, dentists, and hospitals.....	4.18	5.23	9.24	11.84	11.35	9.82
Liquidation of other debts.....	29.38	33.71	32.16	34.77	32.71	32.38
Consolidation of several debts.....	13.26	17.44	15.53	17.69	15.97	15.71
Payments on automobile.....	1.26	—	2.40	2.91	2.92	2.53
Payments on home or home site.....	3.04	4.65	4.07	3.56	3.15	3.25
Insurance.....	.46	1.16	.55	.58	.48	.51
Taxes.....	6.45	5.81	4.99	4.69	5.95	5.80
Others.....	4.91	4.65	4.62	5.34	4.24	4.59
Business expenses.....	32.85	23.26	3.14	5.20	3.56	10.07
To assist friends or relatives.....	1.23	.58	1.66	1.64	1.68	1.57
Current expenses.....	24.53	31.99	46.03	36.76	40.13	36.45
Christmas gifts.....	.95	1.16	1.29	1.02	1.95	1.55
Clothing.....	.58	.58	1.48	1.89	2.47	1.93
Coal.....	1.10	.58	.56	1.38	2.48	1.92
Furniture and house furnishings.....	1.17	1.16	1.48	2.07	2.58	2.15
Moving expenses and rent.....	2.27	2.33	2.22	2.54	3.86	3.23
Repairs on automobile.....	.46	1.75	.37	.84	.79	.73
Repairs on home.....	3.81	3.49	5.55	3.63	3.62	3.73
Travel and vacation.....	.52	1.75	7.58	1.96	1.52	1.60
Wedding expenses.....	.22	—	—	.25	.24	.23
Household and miscellaneous.....	13.45	19.19	25.50	21.18	20.62	19.39
Combination of purposes.....	6.98	5.23	6.28	7.80	8.58	7.99
Miscellaneous.....	.52	—	1.11	.94	.48	.59

That the size of the loan requested depended to a considerable extent on the purpose for which it was to be used is indicated by the figures given in Table 3, reproduced from the report. The smallest loans were negotiated to pay moving expenses and rent and the largest to make payments on a home or home site and for business purposes. The data given in Table 3 include information obtained from 20 companies having adequate information as to the reasons of the borrowers for desiring loans, and exclude those borrowers for whom records were not available on both size and duration of loan.

TABLE 3.—AVERAGE SUM BORROWED AND AVERAGE LIFE OF LOANS, FOR PAID-UP LOANS, BY REASON ASSIGNED FOR BORROWING

Reason given for desiring loan	Borrowers		Loans		Average duration of loan, in days	Average sum borrowed
	Number	Per cent of total for all classes	Total for class	Per cent of total for all classes		
All reasons	4,828	100.00	\$748,602	100.00	237.77	\$165.64
Expenses arising from illness or death	424	8.78	56,883	7.60	269.97	134.16
Funeral expenses	30	.62	4,050	.54	240.33	135.00
Confinement expenses	13	.27	1,640	.22	231.92	126.15
Other payments to physicians, dentists, and hospitals	381	7.89	51,193	6.84	273.60	134.36
Liquidation of other debts	1,327	27.49	226,390	30.24	277.10	170.60
Consolidation of several debts	660	13.67	107,469	14.36	279.32	162.83
Payments on automobile	98	2.03	14,848	1.98	253.09	151.51
Payments on home or home site	134	2.77	27,255	3.64	271.21	203.40
Insurance	21	.43	2,868	.38	249.52	136.57
Taxes	208	4.31	37,247	4.98	273.75	179.07
Others	206	4.31	36,703	4.90	291.40	178.16
Business expenses	386	8.00	78,546	10.49	288.65	203.48
To assist friends or relatives	60	1.24	10,965	1.46	274.87	182.75
Current expenses	1,577	32.66	208,541	27.86	287.91	132.24
Christmas gifts	115	2.38	12,380	1.65	271.84	107.65
Clothing	94	1.95	10,339	1.38	262.04	109.99
Coal	72	1.49	8,060	1.08	308.40	111.94
Furniture and house furnishings	94	1.95	12,775	1.71	276.62	135.90
Moving expenses and rent	128	2.65	12,747	1.70	274.33	99.59
Repairs on automobile	28	.58	3,595	.48	238.14	128.39
Repairs on home	154	3.19	27,790	3.71	285.87	180.45
Travel and vacation	58	1.20	6,425	.86	274.84	110.78
Wedding expenses	7	.14	1,300	.17	282.71	185.71
Household and miscellaneous	827	17.13	113,130	15.11	297.71	136.80
Combination of purposes	309	6.40	53,360	7.13	285.57	172.69
Miscellaneous	20	.41	3,565	.48	250.20	178.25
Reason unknown	725	15.02	110,352	14.74	319.98	152.21

### Security of Loan

DIFFICULTY in collecting was found to be but slightly related to size of income of the borrower, as the percentage of accounts uncollectible was about the same in the case of both the poorer and the more prosperous families. The data obtained indicate that "the assertion of the loan-company managers that character is one of the main things to be considered in making a loan is entirely correct." The report states that most of the companies are able to collect in full in more than 96 per cent of all cases, but that "from 10 to 30 per cent of all of them are usually slow in making payments and much effort is expended in keeping in touch with these delinquents. In a small proportion of cases, collection proves impossible. The borrowers die, move to parts unknown, or are reduced to such straightened circumstances that they can not pay. Eventually these accounts must be written off."

All but 1 of the 29 companies selected for study charged the 3 per cent per month on unpaid balances permitted by law, the one exception charging 2½ per cent.

# EMPLOYMENT OF THE OLDER WORKER

## Problem of Middle Age in Industry

THE fact that a man's calendar age is 40 does not explain why he is what he is, Dr. Eugene Lyman Fisk, medical director of the Life Extension Institute, declared at the Employment Security Conference of the American Management Association, held at Cleveland, January 30-31, 1930.<sup>1</sup> "The man over 40," the speaker maintained, "is not a fixed quantity condemned to be a certain physical type. We are not to view him with discouragement, but rather view ourselves with discouragement for our failure to apply existing scientific knowledge in holding back the ageing of the human body and preventing the disabilities so commonly found in middle life."

There is no use in saying that the man over 45 is not wanted in industrial employment, because he is already entrenched there—millions of him—hard at work and doing good work. A point in his favor is that his waning vitality makes him more conservative. He is more stable in his attitude toward employment. His training and experience count for a great deal. As against this, we have his high death rate as well as his high impairment and sickness rate.

Contrast the death rate in middle life with that in youth. At age 22 the death rate per 1000 living is 4; at age 32 it is 5; at age 42 it is 8; at age 52 it is 15; at age 62 it is 29; at age 72 it is 70. Men are often considered to be in their prime at ages between 35 and 45 but note that the death rate at 42 is double that at 22.

The man over 40 years of age, this authority also declared, suffers especially from so-called silent sickness, for example, chronic diseases which affect the heart, blood vessels, and kidneys and which are on the increase in the United States. The death rate for those over 40 years of age, in fact over 37 years of age is also on the increase as measured in 1920 to 1928. This decline in vitality in life's prime is a conspicuous feature of the vital statistics of the United States, while in other civilized countries there has been an improvement in the death rate at every age period.

In the paper under review it is stated that 100,000 health examinations have shown that at the age of 25 there were for each 1,000 examined, 550 indications of the onset of this silent sickness; at the age of 45 there were 886 indications per 1,000 examined, and at the age of 65 there were 1,700 indications per 1,000 examined.

Various other reports made to the employment security conference are summarized below.

### Hiring-Age Limits

UNLESS we do away entirely with the theory that jobs should be given to those best fitted to do them, it must be agreed that reasonable hiring-age limits merely crystallize the fact of discrimination on an efficiency and safety basis, which has always existed against older persons. This viewpoint was expressed by the industrial relations

<sup>1</sup> Press releases.

advisor of the Associated Industries of Massachusetts, who claimed it was too difficult to teach old minds and old muscles new tricks. He called attention to the fact that the age-limit problem is found not only in industry but in agriculture, the professions, and public service. He maintained that the entrance-age limit for various types of public service is not so high as that which is characteristic of industry. Employment opportunity, the speaker contended, is neither increased nor decreased by the publication of hiring-age restrictions when such limits are reasonably related to the efficiency and safety factors of the occupation.

Publication of hiring-age limits for any artificial reason, such as the mistaken belief that pension costs may thereby be reduced, may have an adverse effect on the labor market from the job seekers' standpoint which can not be too strongly condemned.

Unless old age is to mean universal retirement on savings or pension benefits, we must recognize that older workers can be kept in employment until very much more nearly the end of their lives if the salvage point of view dominates our labor policy. This means that workers as they grow older must be adjusted medically and socially to their work and to their decreasing ease of performance. The publication of a hiring-age limit is an aid in the administration of labor policy along these lines. It reduces the competition of older workers for the few positions which can be held by the less efficient in the particular organization. It increases the likelihood that the worker will remain at his familiar occupation, since he will realize the valuable protection afforded him in his own company and the barrier to reemployment in this or other companies if he should attempt to change his job.

### Investigation of Hiring-Age Limits in Industry

IN A recent survey, including a number of important firms employing more than 3,000,000 workers, the Industrial Relations Counselors (Inc.), of New York City, found that in 42 per cent of the companies employing 26 per cent of the total number included in the investigation, there was no hiring-age limit. In 40 per cent of the companies, however, having in their employment 61 per cent of the total workers covered, either all persons beyond a certain age were refused jobs or it was necessary to secure the consent of a higher executive before such persons could be hired. In 18 per cent of the companies, representing 13 per cent of the total workers, there was no restriction as to the hiring age but persons who were taken on beyond certain ages were not eligible for the company pension. Of the persons employed by companies who would not hire workers beyond a certain age, approximately 80 per cent were on railroads and public utilities. Only about 17 per cent were in manufacturing companies. The conclusion was therefore reached that there were few job opportunities for persons over 45 years of age who desire work with the railroads and public utilities but the chances are over 2 to 1 for securing employment in manufacturing.

The representative of the Industrial Relations Counselors who reported these findings declared that hiring age limits were fixed primarily because of the fact that various jobs had exacting requirements which could not be met by older persons. The real problem, from his viewpoint, is permanent and total occupational disability—not hiring-age limits. He considered the extraordinary amount of publicity given recently to hiring-age limits as largely due to the employment decline in manufacturing and the railroad industry.

### Responsibility of Industrial Management for Middle-Age Obsolescence

THE obsolescence of workers in middle age is in great part due to industry's failure to apply scientific management in a scientific way, according to the professor of industrial engineering at Yale University. Such obsolescence occurs most frequently, he said, in cases when periods of managerial and engineering stagnation have preceded abrupt changes in the interest of intensive progress. When, however, there has been continuity of job requirements the new and improved habits of skill acquired have ordinarily more than offset any loss in original nimbleness. Therefore, in professions and trades in which the basic requirements have remained stable the workers are paid the highest wages after middle life; carpenters, machinists, engineers, and executives are cited as illustrations of this. It was also pointed out in this paper that even in cases where the job and job requirements have developed fundamentally, if there has been continuity in such development, middle-aged workers have shown themselves adaptable to these changes. The explanation given for this is that the workers' learning faculties, in connection with their job methods, have been kept alert by exercise. When, however, the development of new methods is sporadic and abrupt, technical advance tends, in the judgment of this expert, to bring about the obsolescence of middle-aged workers. He reports that these sudden changes ordinarily follow periods of stagnation during which the learning ability of both employees and executives becomes atrophied and obsolete habits become deeper rooted.

### Responsibility of Obsolescent Executives for Their Own Condition

IN A paper on "How are age and technical changes affecting employment of executives," a representative of a firm of management engineers placed a large part of the responsibility of the failure of unemployed executives to secure positions on these executives themselves. He claimed that those who have lived carefully, avoided every kind of overindulgence, kept mentally and physically fit, kept up to date on technical changes, and have not allowed the zest of accomplishment to wane in their daily lives can secure employment at almost any time of life—certainly up to 60 years of age.

The opinions of this speaker are the outcome of 26 years of professional experience with various concerns and thousands of executives and within the last decade with hundreds of very high executives in middle life and beyond it. Age and technical changes as such, this management engineer holds, affect adversely the employment of executives to the degree only that each individual fails before 40 years of age to measure up to something worth while and that good executives are good executives whether they are 40 or 60.

### Employment Security as Affected by Technical Changes

THE displacement of labor through technical progress may be of greater importance as a means of redistributing population and supplying labor to new or rapidly expanding industries than as a cause of actual unemployment, Dr. D. D. Lescohier, professor of economics, University of Wisconsin, suggested.

Scientific management, whether posing under that name or not, has directed the attention of business managers to the importance of quantitative measurement, to precision in planning, to careful records, to the systematic study of experience, to the wisdom of scrapping equipment and methods that have become obsolete, to the effectiveness of meeting competition and obtaining markets by careful attention to the reduction of production costs and elimination of wastes.

The general result of the work of employment managers, this economist pointed out, is the reduction of the total personnel, the giving of steady work to a larger percentage of those on the pay roll, the complete cutting off of some of the intermittent workers, the leveling of seasonal peaks and troughs of employment, and the decrease of part-time work.

#### Other Subjects of Discussion

AMONG other papers presented at this conference was a report on the dismissal-wage policy of a large rubber company. The relationship between a personnel program and pension costs and the flexible age requirements of pension plans were also discussed.

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#### California Report on the Older Worker in Industry

IN AN effort to enlist the cooperation of the employers of the State in a campaign to prevent discrimination against the employment of older workers, the California Department of Industrial Relations plans the publication of a series of bulletins on the general subject of the older worker in industry. The first bulletin in this series, entitled "Middle-aged and Older Workers," has just appeared. It constitutes a general review of existing reports and opinions, with some original tables and charts showing the distribution of persons industrially employed in California by age groups, according to the United States Census of 1920. The conclusions of the California department, based on the material contained in the bulletin, are as follows:

1. The arbitrary discharge of workers because of age, and regardless of their fitness, is becoming a general policy.
2. Because of the development of automatic and labor-saving machinery, the physical stresses and burdens of life are growing less, but our productive period is growing longer.
3. The employment of middle-aged and older workers reduces labor turnover in industrial and commercial establishments.
4. Not age, but experience and capacity and willingness to learn, is important in selecting and retaining employees.
5. Success comes to people after they are 40, for seldom does mature judgment arrive before then.
6. There are jobs in industry which can be graded according to the grades of age, ability, and experience within a community.
7. There is needed a careful, nation-wide study of jobs, conducted primarily to determine what positions the older man is capable of filling as well as the younger man, or better.
8. Discrimination against older workers is regarded by many employers as a confession of inefficient, unwholesome, and poor management.

9. Workers who have reached the age of 40 or 50 are surrounded by certain conditions in life that make them all the more careful in the performance of their duties.
10. Men over 40 are doing the most important work of the world.
11. Older employees exercise a steady and helpful influence upon younger employees of an organization.
12. If employees know that they will not be discharged because of their age, they will give more of their efforts in their younger years.
13. Monotonous clerical work is suited to the placidity of middle-aged women.
14. Older woman workers are not more troubled by illness than their younger sisters.
15. Interested employers can figure out the results obtained from hiring older and more experienced workers.
16. Special attention to the problem of older workers by employers is urgently needed. It is the duty of American industry to keep older workers employed, rather than turn them adrift upon a labor market which refuses to absorb them.
17. Group insurance and pension plans need not exclude older workers from employment. The sum of the pension may be fixed as a percentage for each year of service, multiplied by the number of years of service. This would answer the question of taking care of employees entering employment at an older age. Middle-aged and older employees would rather pay the extra group insurance rates due to their ages, or forego the benefits of such insurance, than be refused employment.
18. Roughly estimated, refusal to hire or retain employees 45 years of age and over, would affect the economic interests of over one-fourth of gainfully employed persons in California. Lower age limits in hiring and discharging would cause even greater and more widespread economic and social distress.

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#### Difficulty of Rochester Employment Office in Placing Older Workers

THE report of the Rochester office of the division of employment of the New York Department of Labor calls attention to the difficulty that office is having in placing middle-aged workers, stating that "one of our greatest problems is the man or woman past 50 years of age out of a job who is mentally and physically fit, \* \* \* and the most unfortunate phase is the constantly increasing demand made on our service for placement of old-age applicants by over 30 organizations. The most regrettable feature is that even with an intensive and persistent appeal for these people we are able to place only a small percentage of them." Out of 370 such applicants the office was able to find employment for only 140 and the placement of this number required special efforts. In many cases the worker is accompanied to the job by a representative of the employment office, "where the man labeled unfit at 50 is given permanent or temporary employment (more often temporary than permanent) out of consideration for the employment bureau appeal rather than the merits of the applicant."

While employers who have been interviewed by the employment office would not admit that they would discharge a good employee, they did admit that when they hire new men, other things being equal, they choose young men. "This is true of pattern making, machine shops, foundries, and in fact a majority of the basic industries." The office has found that the age limit for skilled workers is 50 years and for unskilled workers 45 years, "so that a conservative estimate in these occupations would place the percentage of workers over 45 years at less than 30 per cent although in the same branches of industry the average age of the executive is 65 years. \* \* \* If discrimination continues at its present pace, soon it will be the young and the strong who are at work, leaving those over 45 in accelerating number to walk the streets."

In addition to the fixing of age limits for employment, modern machinery and group insurance are mentioned in the report as causes of this growing problem. Several specific examples of the displacement of workers by mechanical devices are cited. "On a local contract recently one steam shovel displaced over 300 hands. In another case an electric unloading crane displaced 30 men, 5 doing the work of 35. An optical and button tumbling machine displaced 140, 10 doing the work." Group insurance is reported to militate against the older applicants for employment because premiums are higher for them.

The Rochester office states that "something must be done, or we are headed for an ever greater technical efficiency at an unprecedented human cost." It advocates "an enlarged system of labor exchanges and a program of public works to absorb at least a major portion of the worthy class of labor seekers, with a graded system of reduction in the hours of labor to equalize this displacement of the human by the increased introduction of improved labor-saving devices. If not this, an old-age pension is inevitable."

## UNEMPLOYMENT STABILIZATION AND RELIEF

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### Report of Detroit Mayor's Labor Committee on Unemployment

A COMMITTEE of eight officials of the city government was appointed by the mayor of Detroit on December 3, 1929, to study the immediate unemployment situation in that city and to suggest measures for its relief as well as for the alleviation of future unemployment. The committee made its report under date of January 7, 1930.

According to the report, periodic unemployment has occurred in the city of Detroit for many years, due to the fact that its principal industry is automobile manufacturing. Production in this industry reaches its height in early spring and declines during the latter part of the year, employment rising and falling accordingly. In spite of the fact that automotive production in 1929 was unusually high, unemployment is said to have been particularly severe in Detroit during the latter part of the year. It is reported that approximately 5,600,000 motor vehicles were produced in the United States in 1929, the normal production figure being placed at between 4,000,000 and 5,000,000.

The survey showed that apparently everything possible was being done by the public utilities, the construction industry, and by the municipal departments to relieve the immediate situation. The following question therefore arose: "If Detroit experienced such a decided unemployment situation in 1929 with 5,600,000 vehicles produced, what particular industry will take up the slack if only 5,000,000 cars are produced in 1930? Public construction can not take up the slack. \* \* \* People will not buy real estate; they will not buy homes, and many other things that are so desirable if they feel that after a period of time there is a possibility of losing their equity due to unemployment with resultant inability to continue or complete payments due to wage loss. Until such time as our citizenry can be afforded confidence of steady employment and steady income, even though it necessitates shorter hours and possibly lesser income, Detroit, and the entire Nation, is going to suffer."

It is the opinion of the committee that "the present methods utilized to only alleviate unemployment are obsolete" and that "merely to speed up governmental construction and to request our railroads and our public utilities to expedite their programs to alleviate the present situation is only a temporary expediency, and does not in any way approach the final solution of the periodic unemployment situation in so far as Detroit as a municipality is concerned, or the Nation as a whole."

The final answer to the unemployment situation in Detroit, the committee believes, rests with the business institutions, "principally

the automotive." It is recognized that the fluctuations in production in the latter industry are largely due to the "seasonal demands within the industry and the desires of the public," but "the conditions must be changed throughout the automotive industry by the education of the public on what is best for it, first, and secondly, that which is best in so far as general business and the employment of labor are concerned. \* \* \* The stabilization of employment in the automotive industry would not only be an act of humanity to workmen, but it would probably result in the production of better cars at lower cost. The violent changes in output cost the automotive industry in lessened efficiency of the workmen and in unused plant equipment. This cost is hard to calculate, but it is tremendous. Future stabilization in output would be advantageous to the public, to the workmen, and to Detroit and the Nation, and a program benefiting all parties should certainly be put into effect, in spite of the many recognized objections, as rapidly as the industry can educate the public to the necessity." The committee states that "an entirely different economic set-up" must be considered, and indorses suggestions looking toward this end made by a business analyst and statistician connected with one of the automobile companies. This statistician is quoted as stating that the primary cause of uneven production is the fact that most people prefer to buy a new car in the spring and summer; that tremendous fluctuations in output are more pronounced now than they were several years ago; that the industry is moving away from stabilized output rather than toward it; and that the industry must adopt radical changes to prevent greater seasonal unemployment in the future. His suggestions, as given in the report, are as follows:

1. A reduction in price in winter. An increase of price in summer. This is to stimulate buying in winter.
2. Scientific control of field stocks of unsold cars so output will be greater than retail sales in the winter, and less than retail sales in the summer.
3. The public should be induced to look on a car as a means of transportation, and not as a bonnet or a dress where style changes every time the moon changes. \* \* \* that we should get over the craze for model changes (that fundamental changes in car designs are not numerous), and that the blame for this is that the public demands constant change and will get it, and pay dearly for it.
4. The things the automotive industry and the public must do to stabilize employment in the industry \* \* \* are as follows:
  - (a) Adopt a sliding scale of prices varying with the seasons.
  - (b) Make less frequent model changes.
  - (c) Change models in summer rather than winter.
  - (d) Eliminate winter automobile shows.
  - (e) Keep accurate records of stocks, sales, and production.
  - (f) Exercise sound judgment in forecasting sales.
  - (g) Adopt production schedules which will cause field stocks to rise and fall in a predetermined scientific manner.

In addition to the above changes the committee believes that a change in the plan in effect in Detroit of charging full price for license plates for vehicles purchased previous to September 1 would be advantageous and recommends that charges be prorated for the balance of the year from date of purchase. "To many people the difference in cost is very little, while to others it amounts to a great deal, and we surmise that in the latter months of the year there are possible purchasers of vehicles who will not pay for a full six months' license merely to operate a car during possibly November and December, and, therefore, withhold purchase until spring." The sug-

gestion is also made that "all business organizations employ only Detroit citizens until such time as they are all gainfully employed, and that efforts be utilized to discourage new workers from coming to Detroit until conditions have been rectified by balanced production, or other demands have accrued that are sufficient to insure steady work for those already within the confines of the municipality."

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### Production and Employment Stabilization by Packard Motor Car Co.

THE plan of the Packard Motor Car Co. for the stabilization of production and employment was discussed by Mr. Alvin Macauley, president of the company, in a recent published interview from which the information following is taken:

Mr. Macauley believes that much of the present unemployment is due to unwise production methods. He states that the plan of the average manufacturer seems to be to rush production when the period of heavy selling comes, and to keep his factory running day and night, and perhaps Sundays, to meet the demand. Then when the demand slackens he shuts down his plant, leaving his employees to their own resources. In Mr. Macauley's opinion "there is something fundamentally wrong, unwise, and unscientific in this procedure." He believes that there should be careful, scientific, advance analysis of the probable demand and the operation of plants on a virtually uniform level throughout the year.

In line with this view the Packard Motor Car Co. gathers from every available source data which will enable it to decide what the year's production should be. When the number of cars to be manufactured is decided upon, this number is divided by 12 to obtain the monthly production figure. The company therefore produces "no more cars when demand is heavy than when it is light, the demands for the big selling months being met from the surplus produced in the periods when demand is less active."

Mr. Macauley stated that if the employment and earning power of the worker are to be stabilized "every manufacturer whose business will allow it should regard as a prime essential the creation of a reserve fund that will enable him to keep production on an even keel and carry surplus stock to the periods when there is heavy demand in the market for his goods. True, it will cost him some money in interest on capital invested, but this will be far more than offset by lower production costs, by the contentment of his employees, by their zeal and loyalty, and by lessening the turnover in labor, which always is expensive."

## WOMEN IN INDUSTRY

### Women in Limited-Price Chain Stores

THE United States Women's Bureau has recently published a bulletin (No. 76) in which the results of 18 State surveys during nine years, 1920 to 1928, inclusive, concerning women employed in 5-and-10-cent stores and limited-price chain department stores are brought together, with the addition of data concerning wages and earnings for a week in the closing months of 1928 secured by an inquiry covering 6,000 women in such stores.

The workers studied are predominantly a youthful group. Of 3,086 women reporting as to age, 28.3 per cent were under 18 years, and another 28.3 per cent were 18 and under 20 years; 26.2 per cent were 20 and under 25, and only 17.1 per cent, approximately one-sixth of the group, were aged 25 years and over. Naturally among such youthful workers the unmarried predominated, 82.1 per cent of the 2,938 reporting on this point being single, 11.4 per cent married, and 6.5 per cent widowed, divorced, or separated. Slightly over two-fifths (41.2 per cent) of the 2,730 women reporting had been in the trade under one year, 21.8 per cent for one year and under two, 14.4 per cent for two years and under three, and only 1.5 per cent for 10 years and over.

For five days in the week the daily hours varied from under eight to nine, but on Saturday they were sometimes much longer. However, on Saturday two-fifths (41.8 per cent) of the 5,224 women scheduled had nine hours or less; 28.4 per cent had over 9 up to and including 10 hours, while not far from one-third had a day of more than 10 hours, running up to as high as 12 and under 12½ hours. Even including this long day, the weekly hours for three-fifths (63.8 per cent) were under 54, while 11.8 per cent had exactly 54. A striking fact is that the hours worked were frequently fewer than those permitted by law.

In the States having legislation regulating hours 3,988 women were reported. The daily, weekly, and Saturday schedules were shorter than the legal maximum for, respectively, 86.7, 70.6, and 36.6 per cent of the women in these States. In five States in which the law restricted hours to 9 daily, with a weekly limit, 67.6 per cent of the women had daily, 62 per cent had weekly, and 33.5 per cent had Saturday hours shorter than the maximum permitted. The data show that all chains had introduced into many of their stores hour schedules shorter than those allowed by law.

The wage study confirmed the general belief as to the low-wage level of workers in such stores. Wages varied according to geographical location, the size of the city, and the particular chain to which a given store belonged. The study made in 1928 covered 6,061 women in 179 stores in 18 States and in 5 additional cities. The median of the week's earnings for these women was \$12, the

medians for the various States ranging from \$8.80 in Maryland to \$16 in California. There was much diversity in the individual earnings on which these medians were based. "In every locality but Georgia, Rhode Island, and South Carolina some women earned less than \$5. The highest earnings in a State ranged from less than \$12 in Mississippi to \$45 in Ohio."

Weekly rates were higher than weekly earnings, the median rate being \$13, which was 7.7 per cent above the median of their earnings.

In 14 States and 5 cities the median of the rates was the same as that of the earnings; it was above that of the earnings in four States, in two of these by as much as 10 per cent. The lowest rates ranged from \$5 and under \$6 in Ohio to \$11 and under \$12 in California and Kentucky; in cities, from less than \$10 in New York to as high as \$13 in Milwaukee. In every State but one and in every city some women earned less than the lowest rates, the proportions of the total ranging from 2 per cent in Ohio to 24.4 per cent in Milwaukee. No woman had earnings in excess of the highest rate fixed.

The part-time job appears to play a prominent part in the management of these chain stores. In the 1928 study, in addition to the 6,061 women who formed the basis of the study, 1,776 were found who worked only on Saturday. Their earnings for this day ranged from \$1, received by some women in Maryland, Missouri, and Tennessee, to \$3.50 received by two women in Chicago.

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#### Overtime Work of Women in New York State

THE New York Bureau of Women in Industry has recently issued in the Industrial Bulletin for January, 1930, some data taken from an unpublished study of the legal regulation of overtime work for women in factories and mercantile establishments, made in the fall of 1929. Schedules were received from 132 factories and 58 mercantile establishments, employing approximately 10,000 women. The New York law sets an 8-hour day and a 48-hour week for women in such plants, but permits overtime not to exceed 78 hours during the year; in addition, mercantile establishments are freed from all hour limits for the week preceding Christmas. The purpose of the study was to gain some idea of the real need for overtime. Is it really, as its advocates claim, necessary in order to care for seasonal peaks and emergencies? and, if so, how is the present allowance related to the need?

Of the 190 plants from which information was received, 69 seemed to use overtime only occasionally and were excluded from the discussion, which deals with 121 plants, which apparently had a more or less definite purpose in the use made of overtime.

Apparently the 73 factories and the 48 mercantile establishments, included in these 121 plants, held different theories on the distribution of their 78 hours of yearly overtime. Factories, to a much greater extent than stores, bore out the claim that overtime is necessary for seasonal peaks and emergencies. Sixty-seven per cent of the factories but only 17 per cent of the stores used overtime during their busy seasons or in emergencies. However, it must be kept in mind that the busiest season for mercantile establishments, the week preceding Christmas, is exempt from all restrictions on working hours and therefore stores do not have to use any of their 78 hours of yearly overtime during this rush period.

The following table shows the purpose for which overtime was used by the 121 plants.

**NUMBER OF FACTORIES AND MERCANTILE ESTABLISHMENTS USING OVERTIME FOR SPECIFIED PURPOSES**

Use of overtime	Factories	Mercantile establish- ments	Total
During busy seasons	46	7	53
In emergencies	3	1	4
To increase working hours:			
In order to use maximum permitted by law	13	40	53
To operate on a 5-day week	7		7
To operate steadily on long hours, staggering employees	4		4
Total	24	40	64
Grand total	73	48	121

The 46 factories using overtime during their busy season represented a variety of industries. Clothing factories led with 26 plants, the food industry was next with 6, textiles had 5 plants, shoes, metals, and furniture each had 2, and sails, bakelite specialties, and the laundry industry each had 1. The spring was the busy season for a larger number of plants than any other, but fall, summer, and winter were each the busy season for some, and a number of plants had more than one busy season during the year.

Emergencies, it will be noticed, accounted for overtime in only four cases. The three factories which gave this reason explained the emergencies as due to the breakdown of machinery, an unexpectedly large volume of orders during the spring and fall of 1929, and shortage in production for one week in January only. The mercantile establishment used its overtime mainly when a new hardwood floor was being laid, when, since the work was done at night, the stock had to be removed every night after the store was closed, and replaced before it was opened in the morning.

The largest group of plants, however, used overtime regularly in order to increase their working time. Of these, 53, or 82.8 per cent, definitely planned to use all the overtime allowable that they might work the maximum hours permitted by law. The factories distributed this overtime in various ways; the stores regularly used it on Saturdays, though four so planned it that they could use overtime on other days as well.

Seven factories planned to use their overtime so that the plants could be operated on a 5-day week. One plant operated on a 5-day basis for the entire year, working overtime for one-half hour on three days of each week. The other six plants ran on a 5-day week for only part of the year, usually during the summer months. These plants either worked one hour or one-half hour overtime daily for five days a week.

It is admitted that the investigation is not sufficiently extensive to justify a conclusion as to whether, in a State as large as New York, the demand for overtime is really based on seasonal or emergency grounds.

\* \* \* Nevertheless, the fact remains that of the 121 plants employing around 10,000 women, 57 worked overtime during their busy seasons or in emergencies, while 64 firms spread their overtime regularly throughout the year in order to operate their plants on a longer daily or weekly basis.

## Maternity Legislation for Working Women in Foreign Countries

THE labor laws of various foreign countries which make provisions for maternity benefits are reviewed in a mimeographed report of the International Labor Office entitled "The Protection of Women in Industry and Commerce before and after Childbirth" (Geneva, January, 1929). The following data are taken from the third edition of the study. In the introduction to the report, attention is called to the obvious influence of the 1919 draft convention concerning maternity benefits, upon subsequent legislation for the protection of women before and after childbirth, even in countries where the convention has not been ratified. It will be recalled that the draft convention was adopted at the First International Labor Conference, held in Washington, D. C.

### Employment Restrictions

**Scope.**—The draft convention is applicable to both industry and commerce,<sup>1</sup> "industry" being defined as work in mines, factories, building, and transport, except those undertakings in which the only employees are members of the same family. The meaning of "commerce" under the convention is "any place where articles are sold or commerce carried on." In national provisions "commerce" includes employees in offices, shops, hotels, restaurants, and similar undertakings, and in warehouses. Although the scope of the national maternity laws varies considerably in details, it corresponds in general with the draft convention. This is particularly the case with provisions enacted after the adoption of the convention.

**Application.**—In the convention "woman" means any female person, regardless of age, nationality, or marital status, and "child" means any child, legitimate or illegitimate. Except in the case of benefits, these words have the same significance in national maternity legislation.<sup>2</sup>

**Rest periods.**—Under the convention a woman is not permitted to work during the six weeks after her confinement and is entitled to leave six weeks before producing a medical certificate stating that she will probably be confined within that period. In the national laws the length of the rest period ranges from 4 to 12 weeks in all, and a medical certificate is usually required before a prospective mother may leave her work.

**Retention of employment.**—Under the convention the woman's position must be kept open for her during the periods of rest, and there is a similar provision in most of the national laws for the protection of women at such periods. The convention allows, under certain conditions, for an extension of the period during which the employer is precluded from dismissing the woman. An extension is also provided for in some of the national laws, and varies in length, being, for example, 3 weeks in France and 10 months in Yugoslavia.

The principal employment restrictions in national maternity legislation in various countries are shown in Table 1. A blank in the columns of the table usually means that the International Labor Office had no information.

<sup>1</sup> The principle of the convention was applied to agriculture by a recommendation of the third session of the International Labor Conference, 1921.

<sup>2</sup> See section on benefits for exceptions.

TABLE 1.—PRINCIPAL PROVISIONS OF WASHINGTON DRAFT CONVENTION AND OF NATIONAL LAWS ON RESTRICTION OF EMPLOYMENT OF WOMEN BEFORE AND AFTER CHILDBIRTH IN VARIOUS FOREIGN COUNTRIES

Country	Law applicable to—	Rest periods			Dismissal precluded	Nursing intervals	Compulsory crèche			
		Number of weeks		Extension allowed						
		Before	After							
Washington convention	Industry and commerce	6	6	Yes	Yes	Yes	No.			
Argentina	do	6	6	Yes	Yes	Yes	Yes.			
Australia:										
New South Wales	Industry	None,	4	No	No.	No	No.			
West Australia	do	6	6	No	No.	No	No.			
Austria	Industry and commerce	6	6	No	No.	No	No.			
Belgium	do	None.	4	No	No.	No	No.			
Brazil: São Paulo	Industry	11	11	No	No.	No	No.			
Bulgaria	Industry and commerce	12	(*)	No	Yes	Yes	No.			
Canada: British Columbia	do	6	6	Yes	Yes	Yes	No.			
Chile	Industry	40	20	No	Yes	Yes	Yes.			
China	Commerce	11	11	Yes	Yes	No	No.			
Colombia	do	5	5	No	No	No	No.			
Cuba	Commerce	None.	None.	No	No	Yes	No.			
Czechoslovakia	Industry and commerce	6	6	No	No	No	No.			
Denmark	Industry	None.	4	No	No	Yes	No.			
Estonia	Industry and commerce	2	4	No	No	No	No.			
Finland	Industry	4	None.	No	No	No	No.			
France	Commerce	6	None.	No	No	No	No.			
Germany	Industry and commerce	12	(*)	Yes	Yes	Yes	Yes.			
Great Britain	Industry	6	6	Yes	Yes	Yes	No.			
Greece	Industry and commerce	6	6	Yes	Yes	Yes	No.			
Guatemala	do	4	5	Yes	Yes	Yes	No.			
Hungary	do	6	6	Yes	Yes	No	No.			
Irish Free State	Industry	4	No	No	No	No	No.			
Italy	do	None.	11	No	No	Yes	Yes.			
Japan	do	4	6	No	No	Yes	No.			
Latvia	Industry and commerce	4	8	No	Yes	Yes	No.			
Lithuania	Industry	6	6	No	No	No	No.			
Luxemburg	Industry and commerce	6	6	No	No	No	No.			
Netherlands	Industry	8	(*)	No	No	Yes	No.			
New Zealand	do	4	4	No	No	No	No.			
Norway	do	4	6	No	Yes	Yes	No.			
Peru	Industry and commerce	20	40	Yes	Yes	Yes	Yes.			
Poland	do	6	6	No	Yes	Yes	Yes.			
Portugal	do	6	4	No	Yes	Yes	Yes.			
Rumania	do	6	6	Yes	Yes	Yes	Yes.			
Salvador	Commerce	12	11	No	No	Yes	No.			
South Africa	Industry	4	8	No	No	No	No.			
Spain	Industry and commerce	6	6	Yes	Yes	Yes	No.			
Sweden	do	2	6	No	No	Yes	No.			
Switzerland	Industry	(*)	6	Yes	Yes	No	No.			
Venezuela	Industry and commerce	None.	None.	No	No	Yes	No.			
Yugoslavia	do	12	12	Yes	Yes	Yes	Yes.			

<sup>1</sup> Month or months.

<sup>4</sup> Days.

<sup>2</sup> Including rest both before and after confinement.

<sup>3</sup> Some rest period; number of weeks not specified.

<sup>4</sup> See preceding column.

### Benefits

**Scope.**—In some cases the scope of the provision for cash and medical benefits is broader than that of the provision regarding compulsory rest. This arises from the fact that the benefits are frequently regulated by compulsory sickness insurance laws which apply to all employed persons whose wages are under a certain amount.

**Application.**—So far as benefits are concerned, the distinction of nationality is made only in Australia under the Commonwealth maternity allowance act of 1912 as amended in 1928, which covers only British subjects settled in Australia or women who were originally British subjects but whose husbands are aliens.

*Cash benefits.*—There are two principal kinds of cash benefits—a lump sum payable when the child is born, as in Australia and Great Britain, or an allowance so long as the woman is incapacitated for work. In some countries, Germany, for example, provision is made for both a lump sum and an allowance for the incapacity period.

The amount of these benefits varies. The draft convention fixes no amount but merely stipulates that the benefits shall be sufficient for the healthy maintenance of the mother and child while the mother is absent from her work, and that no mistake of the medical adviser in estimating the date of the confinement shall preclude the woman from receiving benefits up to the date on which confinement actually takes place. In practice the amount varies from half to full, or nearly full, wages, the modern tendency being to make it equal to full wages. Often this allowance is augmented by an additional benefit, payable weekly, to mothers who nurse their own children. The law frequently stipulates that the woman shall perform no remunerative work while in receipt of cash benefits nor is this unreasonable, since the object of the benefit is to assure complete rest for her. The cash benefit when it is an allowance usually continues during the whole of the statutory periods of absence, but the nursing benefit may go on for considerably longer (e. g., 6 or 12 months, or until the child is weaned).

*Medical benefits.*—Under the laws of some countries a woman may choose between cash benefits or treatment in a maternity home.

*Source of benefits.*—Under the convention, provisions may be made for benefits by the State or by a social insurance system. In most countries such benefits are paid from sickness insurance funds to which the State, the employers, and the workers contribute. The payment of cash benefits by these funds is almost always contingent upon the insured person's having been a member for a certain time, which varies from 3 to 10 months from the date of entry into insurance. This regulation, however, may be waived by most funds. Medical treatment is accorded by the majority of funds, irrespective of the length of time persons have been members.

Table 2 gives the main national legal provisions concerning maternity benefits in the countries specified. In some countries the scope of the acts extends beyond industry and commerce. Details of such extension are not shown in this table. It will be noted, however, that in Australia, Saskatchewan, and Estonia all women<sup>3</sup> are included.

TABLE 2.—PROVISIONS FOR MATERNITY BENEFITS IN CASH OR MEDICAL SERVICES IN WASHINGTON DRAFT CONVENTION AND IN NATIONAL LAWS OF VARIOUS FOREIGN COUNTRIES

Country	Provisions applicable to—	Benefits				Source
		Cash	Med-ical	Cash and med-ical		
Washington convention	Industry and commerce	Yes	Yes	Yes	Public funds or insurance.	
Australia, all States	All women	Yes	No	—	Public funds.	
Austria	Industry and commerce	Yes	Yes	Yes	Insurance.	
Belgium	Industry	Yes	No	—	—	
Bulgaria	Industry and commerce	Yes	Yes	Yes	Insurance.	
Canada: Saskatchewan	All women	—	Yes	Yes	Public funds.	
Chile	Industry and commerce	Yes	Yes	Yes	Insurance.	
China	Industry	Yes	No	—	(*)	
Czechoslovakia	Industry and commerce	Yes	Yes	Yes	Insurance.	
Denmark	Industry	Yes	Yes	Yes	Do.	
Estonia	All women	Yes	Yes	Yes	Do.	
France	Industry and commerce	Yes	Yes	Yes	Do.	
Germany	do	Yes	Yes	Yes	Do.	

\* Possibly employer.

<sup>3</sup> Restrictions as to nationality in Australia.

TABLE 2.—PROVISIONS FOR MATERNITY BENEFITS IN CASH OR MEDICAL SERVICES IN WASHINGTON DRAFT CONVENTION AND IN NATIONAL LAWS OF VARIOUS FOREIGN COUNTRIES—Continued

Country	Provisions applicable to—	Benefits			
		Cash	Med-ical	Cash and med-ical	Source
Great Britain	Industry and commerce	Yes	Yes	No	Insurance.
Greece	do	Yes	Yes	Yes	
Guatemala	do	Yes	No		Employer.
Hungary	do	Yes	Yes	Yes	Insurance.
Irish Free State	do	Yes	Yes	No	Do.
Italy	Industry	Yes	No		Do.
Japan	do	Yes	Yes	Yes	Do.
Latvia	Industry and commerce	Yes	Yes	Yes	Do.
Lithuania	do	Yes	Yes	Yes	Do.
Luxemburg	do	Yes	Yes	Yes	Do.
New Zealand		Yes	Yes	Yes	
Norway	Industry and commerce	Yes	Yes	No	Voluntary insurance.
Peru	do	Yes	No		Insurance.
Poland	do	Yes	Yes	Yes	Employer.
Portugal	do	Yes	No		Insurance.
Rumania	Commerce	Yes	Yes	Yes	(a).
Salvador	do	Yes	No		Insurance.
South Africa	Industry	Yes	No		(b).
Spain	Industry and commerce	Yes	Yes	Yes	Public funds.
Sweden	do	Yes	Yes		Insurance.
Yugoslavia	do	Yes	Yes	Yes	Do.

\* Possibly employer.

<sup>a</sup> No certain information.

National maternity legislation in certain countries makes rest compulsory but includes no provision for the payment of benefits. This does not always mean, however, that benefits are not paid, as relief may be granted under local or municipal regulations, or as in the case of Canada, under mothers' pensions acts.

*Other benefits.*—Among other benefits are grants to defray funeral expenses, which are provided in 17 countries. In 15 countries maternity benefits are accorded near relatives of insured persons as shown in Table 3.

TABLE 3.—COUNTRIES EXTENDING MATERNITY BENEFITS TO WIVES OR OTHER NONINSURED FEMALE MEMBERS OF THE INSURED PERSON'S FAMILY

Country	Benefits		
	Money	Nursing	Medical
Austria		Yes	Yes.
Chile			By payment of extra premium.
Czechoslovakia	One-half regular	Reduced	Yes.
Estonia	Optional		
Germany	Reduced	Reduced	Yes.
Great Britain	Yes		Yes.
Hungary			
Irish Free State	Yes		
Latvia	Optional	Optional	
Lithuania	Yes		
Luxemburg	Yes	Yes	Yes.
Norway	30 Kr.		
Poland		One-half regular	Yes.
Rumania			Yes.
Yugoslavia	Yes, and child endowment.		Yes.

**Maternity Benefits in Bombay**

DURING 1929 the Government of India passed an act (No. VII of 1929, gazetted May 23, 1929), effective July 1, establishing a maternity benefit for all women employed in factories within a specified district, with the proviso that this district may be extended from time to time by notification in the Bombay Government Gazette. Under its terms every woman working in a factory is entitled to a maternity benefit, to be paid by her employer, of 8 annas (18 cents) a day for three weeks before and four weeks after her confinement, provided she had been employed in the factory of the employer from whom she claims it for a period of not less than six months before she leaves on account of her approaching confinement. In order to receive the benefit she must at the proper time give notice in writing to her employer that she expects to be confined within one month following, that she wishes to have the maternity benefit paid to her, and that she will not work in any employment during the period for which she receives benefit. During her absence after such a notice it is unlawful for the employer to dismiss her. Should she die in confinement the benefit is payable only for the days up to and including the day of her death. The maximum period for which benefit may be claimed is seven weeks. Should she work in a factory within four weeks of her delivery, having claimed benefit, she is liable to a fine not exceeding 10 rupees (\$3.65). Violation of the act on the part of the employer renders him liable, on conviction, to a fine not exceeding 500 rupees (\$182.50).

## MINIMUM WAGE

### Minimum Wage Law and Harvard University

HARVARD University has recently attracted a good deal of attention by its attitude toward woman employees falling within one of the categories covered by the awards of the Massachusetts Minimum Wage Commission.

The incident arose from the discharge by Harvard University during November and December, 1929, of some 20 women employed as cleaners in Widener Library. Some of them applied for work at an employment agency, and a clergyman, becoming interested in one of them, wrote to President Lowell to inquire into the circumstances of her discharge, and received a reply confirming the woman's statement.

"I have inquired into the discharge of Mrs. Emma T. from the Widener Library," wrote President Lowell under date of December 30, "and I find that the minimum wage board has been complaining of our employing women for these purposes at less than 37 cents an hour, and hence the university has felt constrained to replace them with men. Some of them, I hope many of them, will be able to be employed at some other work in the university."

The dispatch to the Baltimore Sun of January 17, 1930, from which this letter is quoted contained also the substance of an interview with Miss Ethel M. Johnson, assistant commissioner of the Massachusetts Department of Labor and Industries, who is in charge of minimum-wage inspection. Miss Johnson explained that the rate established in 1921 for cleaning women employed for less than 42 hours a week was "not less than 37 cents an hour, provided the total for the hourly rate need not exceed \$15.40 per week."

Inquiry disclosed that the women who work in the Harvard dormitories are paid 32 cents an hour. From one of them it was learned that upon complaint from the minimum wage board concerning their pay in violation of the decree, Harvard officials conferred with the State Department of Labor and rearranged the nature of the dormitory women's work somewhat that they could be classed as chambermaids, a category not covered by the minimum wage law. It was disclosed further that the cleaning women at the Fogg Art Museum, while only paid 35 cents by the university, received the additional 2 cents an hour in compliance with the decree from an alumnus interested in the museum.

The publication of these statements caused discussion both in the newspapers and in the State legislature, where a proposal was made to secure the repeal of the laws exempting the real and personal estate of Harvard College from taxation. Incidentally, the discussion of this proposal brought out the fact that setting a minimum wage for cleaning women had in 1919 been opposed on the ground that it would lead to their dismissal and the employment of men. Toward the end of January, the university took official notice of the criticism it had incurred, its comptroller sending a letter of explana-

tion to the editor of the Harvard Alumni Bulletin, and on February 7 the treasurer presented a formal "statement of facts" to the rules committee of the house.

According to the comptroller's letter, the college had, since 1921, been reorganizing the administration of its business departments, bringing the caretaking of the buildings under a central control. In 1929 it was decided to bring Widener Library into this system, which would lead to the substitution of men for women as cleaners.

\* \* \* At that time I wrote the minimum wage commission that we proposed to replace the women cleaners in Widener Library with men as soon after July 1, 1929 as we had opportunity to find other employment for the former. It was not at all a question of wages; it was a question of following the policy which we had found from our experience with other buildings to be economical and efficient. \* \* \* We did not think it advisable to replace the women with men immediately. We did, however, take steps to lighten their work and shorten their hours. \* \* \* On the 18th of December the commission sent us a peremptory notice to the effect that if one of the women in question were employed in the library on December 26 at the rate at which they were then paid, notice would be published in the Boston papers, and also in one of the local papers, to the effect that the university had refused to comply with the minimum wage law. Inasmuch as we had already begun the reorganization of the service in the library and intended to complete it in the immediate future, it seemed wise under the circumstances to make the other changes contemplated. Therefore we notified the women, in writing, that their services at the Widener Library must be terminated, but that we would be glad to employ them elsewhere just as soon as possible.

The treasurer's statement also emphasizes the fact that Harvard had intended to replace these women by men, and that the threat of the minimum wage commission merely hastened its action. He, however, stresses the claim that there was no violation of the minimum wage decree.

At all times since 1921, when the minimum wage commission established a minimum wage of 37 cents per hour for office and other building cleaners, Harvard has been paying these women at least that amount. Their working-day began at 6 a. m. and ended for some at 9 a. m., for some at 10 and for some at 11. All, however, were given an average of over 20 minutes for rest and food between 8:30 and 9, including those whose working-day ended at 9. Payment was made at the rate of 35 cents per hour for the full period, including the time taken out for rest. In the case of those with the longest day (6 to 11), and taking only a 20-minute rest period, this is equivalent to 37.5 cents per hour of work, and of course is at a higher rate for those with the shorter working-day.

The treasurer also stated that the women were given one week's vacation with pay, that no deductions were made for tardiness and absence, and that the work was lighter than that usually included under the head of cleaning. Like the comptroller, he explains that a process of reorganization was under way, and that the dismissal of the women after the receipt of the minimum wage commission's ultimatum only anticipated action which would soon have been taken in any case. Further, he claims that the substitution of men for women will result in a distinct gain to the university. "I am informed that the replacement of these 21 women by 7 men will result in an annual saving of about \$2,000. The men are working full time."

## CHILD LABOR

### Conference on Migratory Child Labor

ON JANUARY 21-22 a conference was held in Baltimore, Md., by representatives of four States—Delaware, Maryland, New Jersey, and Pennsylvania—on the extent, importance, and possible solution of the problem of seasonal child workers migrating among those States. The conference, which was under the auspices of the Maryland League of Women Voters, was attended by State officials representing State departments of health, education, and labor, and by representatives of various unofficial social and civic organizations and of the employing interests involved.

The problem as it was presented to the conference is twofold—a school attendance and child-welfare problem and a child-labor problem. A migrant child was defined as “one who goes with his family to work in the picking fields and the canneries.” The practice is to cross State lines in these seasonal migrations, thus removing the children from the operation of the school attendance laws.

It was brought out that Pennsylvania, for example, has a condition of both influx and exodus of migratory child workers—influx into its agricultural counties of children from Baltimore, Wilmington, and other neighboring cities, and exodus of Philadelphia children to the truck farms and cranberry bogs of New Jersey. Generally only one parent, the mother, is involved in these migrations, the father, as a rule, remaining on his own job in the city.

School authorities reported that lost time from school averages six weeks at the close of the school term in the spring and as many or more at the beginning of the school year in the fall. Once removed from the jurisdiction of the State in which they live, the children can not be brought under the compulsory school attendance laws of that State, and the educational facilities of the section to which they migrate can not practicably be opened to them for the short period of their residence there. The result, of course, is retardation of school work and the breaking down of the compulsory education laws to the extent of the numbers involved in the annual migrations.

Evidence that the number of children involved is not inconsiderable lies in the fact that 2,000 Philadelphia school children were found working in the cranberry bogs of New Jersey alone and 800 Baltimore children worked on the truck farms of a single Maryland county.

In its labor aspects the situation involves insanitary and over-crowded living and working quarters and the employment of very young children for long hours. Many growers and canners declare that they do not want to employ children, but that they are at the mercy of the pickers, most of whom are mothers of young children who can not leave their children behind them in the cities, and who

demand work for the children after they have brought them and established them in the camps. Even in camps which do not permit children to work, it was pointed out, the health, morals, and education of the migrant child living in the labor camps are still jeopardized.

The view was generally expressed that basically the problem is one growing out of a policy, on the part of the growers and canners, of employing cheap labor, with all its attendant evils, and that the school problem is a result which is practically impossible of solution until the cause is removed.

At its closing session the conference authorized the appointment of a joint legislative committee composed of 4 members from each of the four States—1 representing the State department of labor, 1 the State department of education, 1 the social, civic, and welfare organizations, and 1 the employers interested in the question.

This committee will be instructed by the conference to draft uniform legislation dealing with migratory child labor and migratory children, with the specific recommendations that canneries be brought under the operation of the child labor laws of the States in question and that consideration be given to the possibility of providing school attendance during those periods of the school year which coincide with the picking and canning seasons.

Virginia was invited to attend the conference, but did not send a representative. It was stated on behalf of the State that since Virginia shares a common problem with the other four States, it may later cooperate with them in trying to find a solution. The situation differs somewhat in Virginia, according to its statement, in that there is less migration, but Virginia's difficulties with agricultural child labor and lost school time are as acute as are those of the States now working toward a means of solving a growing, economic, and social problem.

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### Farm Labor of Children in Colorado

IN THE spring of 1924 at a meeting, held in Colorado, of various organizations interested from different standpoints in the question of working children, it was unanimously agreed that a survey of child labor and educational conditions should be made in Colorado and the findings reported back as a basis upon which to recommend such legislation as they might seem to warrant. As a result, four studies were made of children working on farms and in beet fields in different parts of the State, of which the fourth has recently been issued by the National Child Labor Committee under the title of "Child Labor in Agriculture and Farm Life in the Arkansas Valley of Colorado."

The study, made in the summer and fall of 1924, covered 329 families with a total of 1,141 children under 16. Children aged 6 to 15, inclusive, numbered 819, and of these 658, or 80.3 per cent, had worked on farms during the current year. The first part of the study deals with the kind of work, by crops, the children had done, the hours worked per day and the days per season, the number of seasons during which they had been employed, and so on. A second part deals with the children and their families, and a third with the child workers and the schools. The facts brought out are much the same as those shown in other studies on the same general lines. The

children in general worked long hours, the average being 9 hours a day, and the range from 2 to 14.5 hours. The average hours per day increased with the age of the children, but this varied to some extent with the economic status of the parents.

The significant fact carried by these figures is that the hours for all children are high. With the trend toward the 8-hour day for adults, to find children working on the average 9 and 10 hours a day suggests a serious problem. Nor is this condition characteristic only of the less secure economic groups such as the contract and wage laborers. Among the owners and renters equally long hours are found. The children, moreover, who have the longest working hours (9.8) belong to the owner and owner-renter groups. Little consideration seems to be given to the provision of a substantially shorter working-day for the younger children. Those 6 to 9 years old were found to be working, on the average, except among the owners and owner-renters, only half an hour less than the older ones.

The studies of the families and of the relations between the children and the schools also show familiar conditions. The families fall into three classes—the owners and owner renters, the renters, and the contract and wage laborers. The last group included 155 families, 47 per cent of the total number studied, and here the parents were almost without exception Mexicans or Spanish-Americans. They represented the lowest economic grade, with unsatisfactory standards of living, poor housing, and all the disadvantages natural to an isolated group tolerated mainly because of their industrial usefulness.

As a rule they are the unskilled workers in industry and agriculture, upon whom, especially since the restriction of foreign immigration, has fallen the demand for recruits for the supply of manual workers. Their usefulness as workers has obscured consideration of their possibilities and needs as citizens, or potential citizens. They are looked upon as an inferior race and are usually found living in groups, more or less isolated from contacts with American life. This isolation results in keeping them backward and ignorant of American institutions and the English language. Such backwardness, in turn, is an important factor in perpetuating their isolation, so that a vicious circle is set up.

The school study showed much time lost on account of work, with resultant retardation. The contract laborers, especially the Mexicans, are apt to be migratory workers, and previous studies have dealt with the difficulties in the way of securing to the children of such families a fair chance for at least the foundations of an education. (See *Labor Review*, May, 1927, p. 154; September, 1929, p. 57.) The situation is discussed in detail, and mention is made of the growing realization in the communities affected, of the seriousness of the problem.

An interesting feature of the report is the parallel drawn between the conditions of factory and agricultural work so far as the children of this region are concerned, more especially in some of the specialized crops, such as beets.

Thus in beets, for instance, the work is in many ways similar to that of children in industry since the processes consist of a mechanical repetition of minute tasks. In bunching and thinning and pulling and topping the children are required to spend their time going through the same motions for hour after hour and day after day. This work, like that in industry, is highly standardized since it must be done in certain prescribed and uniform ways, under close supervision, without opportunity for the exercise of originality or discretion by the child.

If this work were purely incidental in the life of the child, its mechanical and repetitive nature would not be of such serious consequences to his future nor tend to lead him into blind-alley employment. It has been seen, however, that the

children in beet work are likely to continue in it season after season. In other words, the tendency is for a beet child whose family has once been brought into the work to remain in it and to become a part of the system as a "hand," appreciated for his increasing efficiency in bunching and thinning and pulling and topping.

Another point of resemblance is found in the rush periods, in which the worker is required both to speed up and to work for long hours. This is especially true of the work in beets, with bunching and thinning taking the lead, both these operations requiring a strained and fatiguing posture.

Particularly in bunching and thinning is this speeding-up found. Here the period of work for over half the children ranged from 19 to 30 days, with almost 40 per cent of the children working from 9 to 11 hours per day and over 70 per cent from 9 to 14 hours. Considering that this work must be completed within the shortest possible time, the children who bunch and thin are under pressure to keep going all the time during these long hours. Seven days a week at this work were not uncommon. It will be remembered that the child crawls along each row of beets on hands and knees, pulling out the weaker plants in each bunch. There is thus the strain both of posture and of work at high speed.

When work in a "fruit orchard, garden, field, or farm" was exempted from the list of occupations forbidden by the Colorado law to children under 14, presumably the legislators had in mind the kind of work done by a child growing up on a farm, who helps with the work, undertaking light tasks at first, and gradually being trained by his own parents in farming skill. There is little or no resemblance between the child's work under such conditions and the work of the contract or wage laborer's children, who are in a gainful occupation quite as completely as if employed in a factory, mill, or store, but are wholly without the legal protection which would be thrown around them in such places.

To all intents and purposes these children are as much engaged in an occupation involving gain as are the children who work for wages in industry. Families depend upon the work of their children to enable them to undertake a certain acreage. If they did not use their children they would either have to take on a smaller acreage or hire outside labor. Thus the use of their children is an important factor in enabling the families to increase their earnings.

The work in other crops does not involve harmful conditions to so great an extent as does the work in beets, but it is precisely in work among beets that the largest proportion is found of children of contract and wage laborers; that is, of children who are, owing to the economic status of their families, in the least fortunate position and who need most strongly the protection which the laws would give them were agricultural labor recognized as a fitting subject for restrictive legislation. While the report itself does not make any formal recommendations, it is strongly implied that much of the work done by the children studied needs to be covered by an extension of the child labor laws.

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#### Additional Compensation in Cases of Injury to Minors Illegally Employed in Illinois

THE December, 1929, issue of the Labor Bulletin, published by the Illinois Department of Labor, contains a report showing the experience of the second year under the amendment (p. 497 of Acts of 1927) to the Illinois workmen's compensation act, providing that 50

per cent additional compensation shall be paid to minors injured while illegally employed. The report covers children under 16 years of age injured during the period from July 1, 1928, to June 30, 1929, inclusive. The report indicates that industrial accidents occurred to 117 children. Of this number, 77 were illegally employed, 38 were legally employed, and 2 were in work the legality of which has not yet been determined.

Of the 38 accidents to children which occurred in legal employments, 26 were engaged in occupations permitted under the child labor law, and 12 were engaged in occupations not under the jurisdiction of the child labor law, and hence were legal. Of these 12 children legally employed, 5 were golf caddies, 5 were newsboys, 1 was employed in domestic service and 1 in farming.

## HEALTH AND INDUSTRIAL HYGIENE

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### Industrial Health Service in Small Plants

A MIMEOGRAPHED report from the Philadelphia Health Council and Tuberculosis Committee, dated October 2, 1929, outlines the plan under which the industrial health service of the council provides health supervision for plants employing from 100 to 500 employees. The cost of medical service, which is prohibitive for the smaller plants, can be kept down by this plan to a figure proportionate to the cost of such service in larger plants.

Industrial health units of approximately 1,000 employees are organized under the plan, a unit comprising a group of plants which are reasonably near together and in which the number of employees in any single plant does not exceed 500. The medical service for the unit is provided by part-time industrial physicians, and the services of one full-time nurse are sufficient for the group. Each plant which shares in the service agrees to provide a first-aid or clinic room in the plant and to pay its pro rata share in the maintenance of the unit based on the average number of employees.

The service provided for each plant includes physical examination of workers upon entrance and annually thereafter and medical and surgical treatment covering emergency treatment in the plant and follow-up work by the physician of all compensable cases as well as home visiting by the nurse for sick employees. Employees are also advised as to the correction of defects found upon examination and the medical department cooperates with the family physician in the care of the employees. Other services include first-aid instruction to selected individuals or groups in each plant and health talks and classes for the employees generally, together with the showing of motion pictures on health problems of industrial workers. A sanitary survey of the plant is made annually and the general sanitary supervision includes regular periodic inspection of the plant.

The physician and nurse make regular visits to the plant, the amount of time given to each plant being determined by the number of employees. Not less than three hours' health work per week for each 100 employees is provided. Physicians and nurses work on definite schedules and special visits for redressings, examinations, etc., are made. Complete records of all health work done in each plant are kept by the nurse.

The purpose of the health council in organizing this unit service is to demonstrate that it is possible for moderate-sized plants, by means of this cooperative method, to furnish satisfactory medical service and also to assist these plants in establishing and maintaining the service. The cost, which is entirely borne by the participating plants, amounts to \$4.50 per employee per year, payable in monthly installments, and the cost of equipping the first-aid room ranges from \$100 to \$400.

## INDUSTRIAL ACCIDENTS

### Fatalities Due to Mine Explosions

COAL-MINE fatalities in the United States which occurred as results of mine explosions during the fiscal year ending June 30, 1929, numbered 139 as compared with 342 during the preceding fiscal year. Of the 38 explosions brought to the attention of the Bureau of Mines, as indicated in its Information Circular No. 6178, 18 occurred in open-light mines and 19 occurred in closed-light mines, the former causing 43 fatalities and the latter 92. One case could not be definitely classified. While this is a rather unfavorable showing for the closed-light mines, the report points out that 16 of the explosions in these mines, resulting in 91 deaths, were due to electrical ignitions and not to open lights or smoking, and that this condition was brought about by "unsafe electrical installations or to unsafe use of electricity."

There appears to be definite ground for the accusation that many mining companies are using the closed lights in an attempt to offset the installation of the cheaper and much more dangerous nonpermissible electrical equipment rather than using the much safer and more rugged permissible equipment.

A definite relaxation in the maintenance of ventilation installations and practices after closed lights have been installed, is also suggested as a contributing cause.

According to the report, of the total number of explosions in 1928-29, 18 (or 47.4 per cent) were started by electricity, as compared with 14 out of 31 (or 45.1 per cent) during the preceding fiscal year. "It is certainly significant that nearly half (32 out of 69) of the explosions in our mines during the past two fiscal years were started by electricity."

Eleven explosions causing 14 deaths (10.1 per cent) were due to open lights or smoking, "by far the best record for open lights in the history of mining in the United States for at least 50 years," and 26 fatalities (18.7 per cent) in 8 explosions were due to explosives. Of this latter number, 22 were the result of the use of mud-capped shots, a practice which the Bureau of Mines regards as "inexcusable, and there are no extenuating circumstances for this reprehensible practice." In the preceding fiscal year 49 fatalities (14.3 per cent) were caused by open lights and 9 (2.6 per cent) were due to explosives.

The report states that rock dust was used at least in part of 13 of the 38 mines in which explosions occurred, and in 6 of the mines rock dust played an important part in stopping the propagation of the explosion. "It is fair to assume that if rock dusting had not been done in these mines, instead of the 62 deaths which actually occurred, a considerable percentage (possibly all) of the 428 who escaped would have been killed."

Stating that the open light has so many hazards as to gas or dust or explosive ignitions causing fires or explosions in mines, that common sense should outlaw any open flame from any kind of mine workings, the report continues:

There is no question that while the use of closed lights, especially those of the permissible type, and more especially the permissible electric cap lamp, eliminates many of the hazards of possible mine fires or mine explosions, on the other hand explosions and fires can be expected to continue to occur as long as coal-mining people install this safe-lighting system in some mines and refuse to install it in others (fully half of our coal mines continue to use open lights). Also, as long as coal-mining companies install closed lights and allow (openly or otherwise) underground smoking, use of fuse, squibs, black blasting powder, or open types of electrical machinery, or as long as they refuse to rock-dust, or continue to rock-dust in the desultory, half-hearted manner in which most of our rock-dusting is done, widespread explosions in coal mines are certain to continue to occur. \* \* \* Explosions are going to occur as long as mining men continue to insist on using selectivity as to precautionary measures toward prevention of explosions, rather than whole-heartedly committing themselves to safety and using all of them.

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### Accident Record of the Portland Cement Association

THE Portland Cement Association, which has made a most enviable record in the reduction of cement-mill and quarry accidents throughout a series of years, has furnished the bureau with a preliminary statement of its 1929 report. Twenty-seven plants (17.9 per cent) of the 151 reporting completed the year without a single lost-time accident. One of these, however, operated only six months of 1929. Three of the mills have operated more than three years each without a lost-time accident, and one of these has a record of 1,330 days since the last accident, which occurred in May, 1926. Five of the mills have operated between two and three years without an accident. Very interesting and significant as indicating what can be done in the way of preventing accidents is the fact that with an increase of 43.8 per cent in the number of plants reporting in 1929 as compared with 1924, there was a decrease of 73.6 per cent in the number of accidents, both fatal and nonfatal. In 1924 there were 3,134 disabling accidents, including fatal cases, in 105 plants, and in 1929 there were 828 in 151 plants. In the former year the average was about 30 accidents per plant, and in 1929 the average has been reduced to between 5 and 6. In 1924 the longest accident-free period in the best mill reporting was 408 days, while in 1929 this period had been increased to 1,330 days, as already noted.

In transmitting the information to the bureau the association states that perhaps the greatest asset is in the correction of the viewpoint of the workers as to the necessity for accidents. As accident occurrence has been reduced from year to year "the men have unconsciously corrected their pictures of how many accidents are 'necessary.' They have learned to know that they can beat the best they have ever done."

The level of intelligence and interest among our workmen is rising and the sizeable decreases in injury to workers is paying big dividends in happiness, contentment, appreciation, and other benefits.

## WORKMEN'S COMPENSATION AND SOCIAL INSURANCE

### Legislative Action on Workmen's Compensation in 1929

DURING the legislative year of 1929 all except 4 (Alabama, Kentucky, Louisiana, and Virginia) of the 44 States having compensation laws met in regular session. Thirty-five of the States meeting in regular session acted on the subject of workmen's compensation. Regular sessions were held, but no action was taken in Arizona, Nevada, New Hampshire, Tennessee, and Utah, nor in three States (Arkansas, Florida, and South Carolina) which have no compensation law. However, in Arkansas, a workmen's compensation law was enacted to cover only employees of the State Highway Commission injured in the course of their employment. In addition to their regular sessions, several of the States met in extra session (Connecticut, Florida, New Mexico, Oklahoma, Tennessee, Texas, West Virginia, and Wyoming), but no action was taken in any of these States except Texas. Louisiana also held a special session, but enacted no amendments to the compensation law. Mississippi, one of the four States without a workmen's compensation law, held a special session, but took no action on the enactment of a compensation law. The Congress of the United States also convened in special and regular session, but made no changes in the Federal compensation acts.

In several issues<sup>1</sup> of the Labor Review summaries have been given of 1929 legislative action on workmen's compensation. In this issue reference is made to the Arizona workmen's compensation law as revised by the code commission, and amendments are shown for the States of Indiana, Maine, and Wisconsin.

#### Arizona

ALTHOUGH no legislative action was taken on the Arizona workmen's compensation act in 1929, mention is here made of a legislative act of 1925 (chap. 35) by which a code commissioner was appointed to revise and codify the laws of the State of Arizona. According to the language of the act, "The said commissioner shall not, however, undertake to make any change of existing laws, but shall harmonize where necessary, reduce in language, and remove inconsistencies where the same are found to exist." Under this authority the workmen's compensation law of the State was revised, and many changes were made in the language and form of the act, but not in the substance. For the revised workmen's compensation act see Revised Statutes of Arizona, 1928, sections 1391-1457.

<sup>1</sup> May, 1929 (pp. 135, 136); August, 1929 (pp. 85-88); September, 1929 (pp. 89, 90); October, 1929 (pp. 73-77); November, 1929 (pp. 52-55); and December, 1929 (pp. 71-73).

### Indiana

THE workmen's compensation law of Indiana was reenacted, with several changes, by chapter 172.

A copy of notice of election or rejection must be served on the industrial board within 5 days after service on the employee or employer. (Sec. 3.) Certain public bodies, also banks, trust companies, and building and loan associations are now not required to insure payment of compensation. (Sec. 5.) The election of the employer alone is sufficient to bring casual laborers, agricultural workers, and domestic servants under the act, instead of by joint election as formerly. (Sec. 9.) Notice of an autopsy must be given to the widow or next of kin, and an opportunity must be given to have a representative present. (Sec. 27.) In temporary partial disability cases a weekly compensation is now provided equal to 55 per cent of the difference between the average weekly wages and the weekly wages which the employee is receiving after the injury, instead of one-half the difference as formerly. (Sec. 30.) For the permanent and complete loss of hearing the period of compensation is increased from 100 to 200 weeks; in permanent disfigurement cases it is now provided that no compensation shall be paid in case of injuries already compensated under the schedule for specific injuries; and temporary total disability compensation shall be deducted from the award for permanent disfigurement. (Sects. 31g and 31i.)

Payment of the balance of the award to dependents in case the employee's death results from a cause other than the injury is limited to 300 weeks. (Sec. 36.) Lump-sum payment is to be administered according to the manner authorized by the court, instead of by the board as formerly. (Sec. 44.) An award of the full board affirmed on appeal by the employer may be increased 10 per cent by order of court. (Sec. 61.) Certain new requirements are now provided for accident reporting. (Sects. 66-67.) The commissioner of insurance is now empowered to issue certificates to transact the business of workmen's compensation insurance. (Sec. 72.)

### Maine

THE workmen's compensation law of Maine was reenacted, with several changes, by chapter 300. Certain classes of employees (farm laborers, domestic servants, public officials, and persons in casual employments) heretofore excluded from the act may now be covered. Dependency is determinable as at the time of the accident. A new method of computing "average weekly wages" is provided, by adopting the amount received at the time of accident, if employment has been continuous for 250 days prior to the accident; otherwise, by dividing the earnings received during the preceding year by number of weeks employed. In seasonal occupations the amount of wages in the previous year is divided by 52.

An employer engaged in more than one business comes under the act only as to the business specified in his assent. The waiting period is clarified by allowing compensation to begin on the eighth day of incapacity, the day of the accident to be counted as the first day. In the compensation schedule for specific injuries the former provision of "two-thirds the average weekly wages" during the specific period

is dropped. Allowance for funeral expenses is increased from \$200 to \$300. Several new provisions for notice of injury and claim for compensation are made—notice of injury may now be given either to the general superintendent or to the foreman; an extension of three months for the period of notice is given in the case of the death of the employee on account of mistake of fact. An employee now forfeits his right to compensation for refusal to receive proper medical or surgical treatment.

The beneficiary may sue a third party in his own name if an employer or insurer has failed to sue such party within 30 days, instead of 90 days, as formerly. The industrial accident commission now consists of five members instead of four, as heretofore. Other changes have also been made in the penalties and procedure.

### Wisconsin

THE workmen's compensation law of Wisconsin was amended in several respects by chapters 241 and 453 of the Acts of 1929.

Chapter 241 permits the payment of full salaries to school-teachers during disability.

Chapter 453 provides for the following changes in the law: An employer's election may now include employees not in the course of the employer's business; an employer lending any employee is liable for compensation; farm laborers and domestic servants are excluded from the act unless an employer elects to include them; in the case of a deceased employee leaving no one wholly dependent upon him for support, an unestranged surviving parent is entitled to a death benefit of \$1,200; contribution for support prior to the accident or death shall not be essential in establishing dependency; notice of injury must be given either within 30 days after the injury or 30 days after employee was aware of the nature of his disability; several new provisions were also made in the selection of a physician by an employee in certain cases, and new provisions for settlement of claims and appeals.

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### Experience Under Federal Workmen's Compensation Acts

THE thirteenth annual report of the United States Employees' Compensation Commission, for the fiscal year ending June 30, 1929, covers the operations of the three Federal workmen's compensation acts as administered by the commission.

Section 1 of the report relates to injuries received by civil employees of the United States. During the first nine months of 1929, 18,517 injuries were reported. The total number of claims received was 6,542; of this number 198 were death claims and 6,344 disability. In the corresponding period of 1928 there were 16,251 reported injuries and 5,866 claims were received, of which 204 were for death and 5,662 for disability.

The Post Office Department reported the largest number of injuries, the War Department the second largest, and the Navy Department third. As to deaths, the War Department ranked highest in number of cases, with the Post Office Department second, and the Treasury Department third.

Section 2 of the commission's report deals with the operations of the longshoremen's and harbor workers' compensation act. The report covers the second year (fiscal year ending June 30, 1929) under the longshoremen's act. The number of injuries reported during this period was 38,052, of which 183 resulted fatally.

The following table gives the number of cases, by extent of disability and occupation group, for the fiscal year ending June 30, 1929:

TABLE 1.—NUMBER OF INJURIES, BY EXTENT OF DISABILITY, FOR EACH IMPORTANT OCCUPATION GROUP, FISCAL YEAR 1928-29

Occupation group	Nonfatal cases					Fatal cases			
	Temporary total disabilities		Permanent partial disabilities			Number	Total estimated cost		
	Number	Compensated cases		Compensated cases					
		Number	Amount of compensation	Number	Amount of compensation				
Longshoremen.....	14,805	10,711	\$1,051,648	475	\$300,179	88	\$385,150		
Repair men.....	3,618	1,906	173,854	126	87,563	25	132,477		
Supply men.....	11	7	1,407						
Inspectors.....	60	21	2,420	3	1,631				
Miscellaneous.....	271	154	15,517	15	10,144	8	27,807		
Total.....	18,765	12,799	1,244,846	619	399,517	121	545,434		

The following table classifies the number of cases, by extent of disability and cause:

TABLE 2.—NUMBER OF INJURIES, BY EXTENT OF DISABILITY AND CAUSE, FISCAL YEAR 1928-29

Cause	Nonfatal cases					Fatal cases			
	Temporary total disabilities		Permanent partial disabilities			Number	Total estimated cost		
	Number	Compensated cases		Compensated cases					
		Number	Amount of compensation	Number	Amount of compensation				
Vehicles.....	31	24	\$3,188	1	\$225	2	\$8,500		
Pressure equipment.....	30	21	1,755			2	15,000		
Explosive substances.....	5	3	127	1	1,007	1	7,500		
Electricity.....	14	13	1,117			1	3,428		
Conflagrations and flames.....	101	31	2,426	1	226				
Hot substances.....	198	121	8,101	3	2,596				
Dusts, gases and chemicals:									
Handling or contact with.....	157	86	5,047						
Inhalation.....	89	42	3,258			3	8,253		
Swallowing: All other substances.....	5	3	41						
Falls of persons.....	2,742	1,996	238,964	81	63,291	65	282,192		
Struck by—									
Moving objects.....	2,785	2,026	218,949	112	86,818	16	79,296		
Flying objects.....	852	234	16,748	20	20,149				
Falling objects.....	4,687	3,495	383,666	159	97,783	20	84,792		
Handling objects.....	4,459	3,169	246,778	167	79,384				
Hand tools.....	887	522	31,508	24	10,456	1	5,533		
Stepping in or on objects.....	461	268	17,724	1	820				
Striking against objects.....	621	374	27,145	13	6,550				
Miscellaneous.....	448	238	22,416	15	11,019	3	21,624		
Machinery.....	193	133	15,898	21	19,193	7	29,316		
Total.....	18,765	12,799	1,244,846	619	399,517	121	545,434		

Section 3 of the report shows the results of the operation of the latest act which the commission is charged with the responsibility of administering—the District of Columbia workmen's compensation act.

For the first year of the operation of the act (year ending June 30, 1929) the commission reports 14,295 injuries, of which 59 proved fatal. In addition to these cases the commission reports:

There were 564 nonfatal and 2 fatal cases, making a total of 566, which were reopened for further consideration during the year. In the handling and disposition of cases during the year it was found that 6,518 represented no loss of time, and that 3,720 cases involved not more than seven days of disability. There were 476 nonfatal and 7 fatal cases found to be outside the scope of the act. In 2,878 cases compensation was paid without an award having been made. There were 132 compensation orders issued during the year, 87 of which awarded compensation in nonfatal cases, and 18 awarded compensation in fatal cases. Twenty-seven compensation orders were in rejection of claims, and 8 of these rejections covered fatal cases. There were 2 fatal cases in which there were no dependents to claim compensation, and in each case \$1,000 was therefore paid into the fund under section 44 of the act. There were left 1,096 incomplete or pending cases.

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### Analysis of Mutual-Benefit Association Plans

A PAMPHLET issued recently by the industrial relations section, department of economics and social institutions, Princeton University, analyzes the provisions of 100 mutual-benefit associations which are in successful operation.

While industrial insurance has advanced rapidly in recent years, the report states, the progress has been least marked in the field of insurance against sickness. With industrial life, accident, and endowment group insurance and similar individual insurance available, employees are still left to face the possible loss of income through sickness and ill health. While compensation in case of death has been largely taken over, therefore, by group insurance, the mutual benefit association still has a field of usefulness in providing protection against the contingency of sickness. The report, which is designed to present the essential features of a benefit association as they have been worked out in actual practice, was planned for the use of industrial executives or others who have never participated in the introduction or administration of an association, and the attempt has been made to indicate the modal plan rather than discuss at length the unique features in existence in some associations.

At the conclusion of the report some questions of detail and policy are considered and existing opinions concerning such plans are summarized.

Respecting the question as to whether or not the inauguration of a plan is an undue extension of employer paternalism, it is argued that unless the great majority of employees have shown the foresight and ability to prepare themselves for these contingencies or can be awakened to a realization of the importance of such preparedness it is less paternalistic to help a man to help himself in the most economical way possible than to allow him to become dependent on the generosity of others in time of need.

The advantages of mutual-benefit plans over company-financed relief are said to lie in the fact that while contributory plans are some-

what more troublesome to administer they contain "that element of self-respecting responsibility which is truly American." The most justifiable feature of company-financed plans is believed to be found in the attention given to prevention rather than to indemnification and the most important trend in company programs for the protection of the wage earner is the effort toward elimination of accidents, industrial disease, and nonoccupational illness, as few mutual benefit associations are able to finance adequate medical and nursing staffs.

In regard to the advisability of allowing the group-insurance plan to cover all risks, it is said that group sickness insurance is for various reasons more expensive than group life insurance and that at present from an actuarial standpoint life and accident insurance have reached a much greater degree of exactitude than has sickness insurance. It seems therefore that the mutual benefit association can perhaps adjust itself more economically to the needs of the local situation.

Small companies, it is believed, can not safely inaugurate a mutual benefit association without reinsurance, since the insurance principle does not properly apply until there is an averaging of risks. The employees of a small company present too limited an experience for the proper averaging of sickness incidence and in case of a drain due to an epidemic the membership must be large enough to distribute it over a larger and more diverse group.

The reserve plan in which dues are sufficiently high is considered more satisfactory than the assessment plan, as it is the safest type, the easiest to administer, and is less likely to arouse dissatisfaction. A combination of the two plans may be followed, however, as excessive reserves are unfair to nonbeneficiary members who leave the company's employ and the high dues necessary to create such reserves are likely to discourage membership. Assessments in times of heavy drain on the resources of the fund may be more satisfactory, therefore, than a reserve large enough to meet unusual demands.

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### Recent Workmen's Compensation Reports

#### New York

THE Industrial Bulletin for January, 1930, published by the Industrial Commissioner of New York State, contains a report of compensated construction machine accident cases closed in the year ending June 30, 1929. The largest number of cases of disability (237) was caused by dredging machines and power shovels. A large part of the injuries in this group was caused by being struck either by the bucket or by objects falling from the loaded bucket. The second largest number of disabilities was reported in connection with concrete-mixing machines. Of the 221 reported cases, 85 were caused by workers coming in contact with moving parts of the machines. Forty were injured while engaged in starting the engines used to run the mixers. Other sources of injury were due to moving the mixers, to being hit by skips, to employees' getting concrete in eyes, and to cuts from sharp objects such as chutes and hoppers, while one case was reported of an employee who had fallen into a mixer. The following table shows the number of cases closed during the year ending June 30, 1929.

## COMPENSATED CONSTRUCTION MACHINE ACCIDENT CASES CLOSED IN THE YEAR ENDING JUNE 30, 1929

Kind of machine	Total number of cases	Extent of disability				Total amount of compensation <sup>1</sup>	
		Death	Permanent partial		Temporary		
			Number of cases	Number of weeks	Number of cases		
Concrete mixers	221	4	84	4,938	133	1,157	\$126,741
Rock drills	70		20	504	50	225	15,101
Pile drivers	16		8	488	8	57	11,181
Road rollers and graders	57		10	340	47	330	12,797
Grouting machines and cement guns	2				2	13	20
Well drills	15		4	331	11	29	5,845
Trench and ditch digging machines	9	1	2	222	6	25	6,237
Dredging machines and power shovels	237	9	83	4,950	145	1,594	214,883
Other engineering and construction machines	82		22	906	60	279	21,930
Total	709	14	233	12,679	462	3,709	415,027

<sup>1</sup> Includes the estimated present value for each death case.

## Porto Rico

THE annual report of the newly created Industrial Commission of Porto Rico for the period August 13, 1928, to June 30, 1929, shows briefly the experience under the present workmen's accident compensation act which became effective on August 13, 1928.

Under the new act the monopolistic State fund insurance is superseded by a competitive system under which the State fund is in competition with the private insurance companies and self-insurers.

The following figures disclose, however, that the largest group of cases was filed under the State fund system.

	Cases filed
Belonging to State fund	10,928
Belonging to private insurance companies	6,508
Belonging to self-insurers	2,935
Uninsured employers	429
Total	20,800

Of the 20,800 cases filed during the period the following statistics show the approximate distribution of the cases:

Cases settled:	Number
Death and permanent partial disability	233
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Temporary disability—	
State fund	3,520
Insurance companies and self-insurers	6,083
Total	9,603
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Cases ready for settlement:	
State fund	3,000
Insurance companies and self-insurers	1,000
Total	4,000
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Incomplete cases	6,964
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Grand total	20,800

## Rhode Island

THE tenth annual report of the commissioner of labor of Rhode Island discloses that although there were more workmen employed, with a greater number of hours' exposure, in the year 1928 than in

1927, yet the number of accidents dropped from 29,462 in 1927 to 27,896 in 1928, or a decrease of about 5 per cent. The fatal cases reported, however, increased from 38 in 1927 to 49 in 1928.

#### Tennessee

THE sixth annual report of the Department of Labor of Tennessee contains a section devoted to a report of the division of workmen's compensation for the calendar year 1928.

During the year 1928 only those accidents were listed in which the injured person was disabled for one full day or longer. Hitherto the department has listed all accidents reported regardless of the length of disability. Consequently, the number of accidents listed was materially reduced during the year 1928, to only 12,519 in comparison with 23,812 during 1926 and 17,135 during 1927.

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#### Proposed Social Insurance in South Africa

THE South African Commission on Old Age Pensions and National Insurance has recently issued two reports, the first recommending a scheme of national health insurance, and the second a limited scheme of unemployment insurance. The recommendations contained in the first report of the commission formed the basis of the old-age pension scheme now in force in the Union. (See *Labor Review*, September, 1929, p. 96.) The main provisions of the two recent reports are given in the *South African Social and Industrial Review* for October and November, 1929.<sup>1</sup>

#### Health Insurance

THE commission recommends that the health insurance plan shall include all employees earning £400 (\$1,947) or less per annum, who are employed within insurance areas, i. e., the areas of urban local authorities, including municipalities, village councils, village management boards, and health boards (unless specially exempted by the Government), and such other areas as the Government may from time to time proclaim. Agricultural workers are excluded, but the plan is to cover domestic servants, casual and seasonal workers, and out-workers, provided they are employees. Employees earning not more than £60 (\$292) per annum are excluded when the authorities are satisfied that the employer has made satisfactory provision for adequate hospital and institutional accommodation and medical benefits. All persons eligible must be insured.

Contributions are graded according to earnings and range from 8d. (16 cents) weekly for persons earning under £36 (\$175.19) a year to 4s. 6d. (\$1.10) weekly for those earning £320 (\$1,557) and up to £400 (\$1,947). For those in the lowest earnings group, the whole contribution must be paid by the employer, but in the other groups the employee pays a share increasing with his earnings, until in the highest group the payment is divided equally between employer and employee. There are no maximum or minimum ages for insurance. The benefits, like the contributions, vary with the earnings classification. In the lowest group the benefit is 4s. (97 cents) a week for

<sup>1</sup> Union of South Africa. Department of Labor. *Social and Industrial Review*, Pretoria, October and November, 1929.

the worker, with an allowance of 1s. (24 cents) for his wife and 6d. (12 cents) for each dependent child, not to exceed four, under 16. In the highest earnings group the benefit is 56s. (\$13.63) a week for the worker, 14s. (\$3.41) for his wife, and 7s. (\$1.70) for each child. These allowances are payable for the first 26 weeks of illness, while for the second 26 weeks the benefits are to be reduced by one-half. Periods of illness not separated by 26 weeks are to be treated as continuous in deciding whether the sick benefit is to be calculated on the basis of the first or the second 26 weeks. No sick pay is granted for the first three days of illness, nor is the benefit payable unless the worker has been insured for 26 weeks, consecutively or otherwise. If, owing to unemployment, the worker's contributions stop for more than 6 weeks in 52 weeks, he is "out of insurance," and when reemployed must enter as a new member. He may, however, while unemployed, keep up contributions for medical and funeral benefits for a period not exceeding 12 months.

In addition to sick benefit, the plan provides for funeral, medical, and maternity benefits.

#### Proposed Unemployment Insurance

THE commission feels that insurance against unemployment faces certain difficulties not attending a plan for health insurance, and that it would be impossible to frame a scheme to cover "acute and prolonged unemployment caused by an industrial crisis or any other cause which would bring about such a depression that a considerable proportion of the workers would be thrown out of employment." The scheme the commission proposes is to apply only to what may be called normal unemployment. It is to apply to all employees, except agricultural workers, earning not over £400 (\$1,947) a year, who are employed in insurance areas. The contributions would range, according to the employee's earnings, from 4d. (8 cents) to 1s. 4d. (32 cents) weekly, the employer paying the whole contribution in the case of the lowest wage group (those earning less than £36 (\$175) a year), and the employee's share in the other groups rising to one-half for those earning from £90 (\$438) to £400 (\$1,947), inclusive. Benefits are payable only for unemployment not due to the worker's own fault, and not caused by a strike or a collective dispute, and the insured must accept suitable employment, if offered. In the lowest earnings group the benefits are 4s. (97 cents) weekly for the insured, 1s. (24 cents) for his wife, and 6d. (12 cents) for a child, and from this they rise to 16s. (\$3.89) for the insured, 4s. (97 cents) for his wife, and 2s. (49 cents) for a child in the highest group. The conditions to govern the payment of benefit are as follows:

1. No benefit will be payable until an insured has been insured for 26 weeks.
2. No benefit will be granted in respect of the first seven days of unemployment. (The unemployment week will be seven days, but Sunday or any other holiday will, under the definition, not be regarded for unemployment.)
3. Periods of unemployment not separated by more than nine weeks will be treated as one continuous period of unemployment.
4. The insured must have paid 26 weeks' contributions within the previous two years.
5. Not more than 36 weeks' benefit will be paid in any one year.
6. Not more than one week's benefit will be given in respect of each six weeks' contributions paid from the commencement of insurance.

## LABOR LAWS AND COURT DECISIONS

### Injury Resulting from Assault by Fellow Employee Held Compensable in Oklahoma

THE Supreme Court of Oklahoma recently decided that an injury resulting from an assault by a fellow employee is an accidental personal injury within the meaning of the State workmen's compensation act and is therefore compensable. (Indian Territory Illuminating Oil Co. v. Jordan et al. 283 Pac. 240.)

On January 28, 1929, Doyle Jordan was employed in a hazardous occupation by the Indian Territory Illuminating Oil Co., in the State of Oklahoma. On the day referred to, Jordan was sent by his foreman to obtain a wrench then in the possession of a fellow workman. While in the act of securing the wrench an altercation arose and Jordan was injured.

The Oklahoma State Industrial Commission found in part:

That the fellow employee referred to was the aggressor in said fight; that prior to said fight an ill feeling existed between the participants arising out of matters not connected with claimant's employment; that during said fight claimant sustained an accidental personal injury; that said accidental injury occurred out of and in the course of claimant's employment with respondent herein.

The commission found that Jordan had sustained a temporary total disability and a serious permanent disfigurement, and it therefore awarded compensation.

An appeal was taken from the order of the industrial commission to the State supreme court by the employer, who contended that in order to be compensable within the meaning of the Oklahoma compensation act, the injury must be shown to have arisen out of the employment. There must be a causal connection, the company said, between the conditions under which the work was required to be performed and the resulting injury. By reason of the fight which occurred between the two employees—personal to either or both of them—the injury, it was averred, did not arise out of the employment.

The supreme court cited several cases in other jurisdictions in which the courts have held that where an injury arose from an assault the motive of which was personal, the injury could not be said to have arisen out of the employment. Again, the court said: "Other authorities, dealing with injuries resulting from the intentional acts of a co-employee make compensation dependent upon whether the employer could have foreseen and prevented the calamity." In Oklahoma, however, a more liberal construction of the statute has been taken. The court referred to two prior cases decided by the Oklahoma Supreme Court in which it was held to be well settled "that the fact that an injury is the result of the willful or criminal assault of another does not prevent the injury from being accidental." (Okla.-Ark. Telephone Co. v. Fries, 128 Okl. 295, 262 Pac. 1062, 1064.)

In *Stasmos v. State Industrial Commission* (80 Okl. 221, 195 Pac. 762) it was earlier decided by the same court that:

Injury resulting from an assault by a workman upon a fellow workman while the latter is engaged in the work of the master is an "accidental personal injury arising out of and in the course of employment" within the meaning of the term as used in section 1 (art. 2) of the workmen's compensation act.

The test of liability under the workmen's compensation law for injuries arising out of and in the course of employment is, not the master's dereliction whether his own or that of his representatives acting within the scope of their authority but is the relation of the service to the injury, of the employment to the risk.

The only case in which the employer would be relieved of liability, the court said, was when the injured employee was the aggressor. From the findings of the commission, that fact was in favor of Jordan. Since the record and findings at all times showed that the coworker was the aggressor, the court sustained the award of the industrial commission.

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### Rupture Resulting from Coughing Held Compensable in Ohio

THE Supreme Court of Ohio in a recent case affirmed the judgment of a lower court awarding compensation to an employee suffering from a hernia which resulted from a coughing spell occasioned by inhaling sulphuric acid fumes. (*Industrial Commission v. Polcen*, 169 N. E. 305.) John Polcen was employed in the sulphuric department of a chemical company in Cleveland, Ohio, for a period of 10 years. On April 23, 1926, Polcen suffered a violent coughing spell which he claimed was caused "by the emission of sulphuric fumes into the atmosphere of the factory."

According to the testimony of the employee, "We worked all day on the job until between 3 and 3.30. It was gassy all day on the job, and I done a lot of coughing that day, but about 3.30 or so I was overcome with gas and I went outside and I almost strangled from coughing; I got a little pain but I didn't think it was as bad as it was. I was outside about half an hour, I judge, and then went back in; I had the pain but I didn't pay much attention to it, as we often get the coughing down there."

The following day Polcen still complained of the pain, and upon an examination by his doctor, it was learned that he had suffered a hernia. Polcen subsequently filed an application for compensation, which was disallowed by the Industrial Commission of Ohio. At a rehearing of the case, the commission reaffirmed its original decision. The injured employee thereupon appealed to the courts. In the court of common pleas of Cuyahoga County a judgment was rendered in his behalf, and was later affirmed by the court of appeals of the same county. The case was brought to the State supreme court by the Ohio Industrial Commission, the commission claiming that there was no evidence that Polcen sustained an injury compensable under the Ohio workmen's compensation act.

The industrial commission contended that the testimony of Polcen and other witnesses as to the conditions existing at the time that Polcen "almost strangled from coughing" disclosed "nothing of the nature of an accident"; that it was not, therefore, the condition existing in the factory on the day in question, but the continuous emission of

the fumes which caused the hernia by coughing; and that since the emission of the fumes was not extraordinary, no injury resulted.

The Supreme Court of Ohio, however, in an opinion by Judge Allen, held that—

The evidence does show that the coughing upon that day was extraordinary. The evidence tends to show that this particular coughing spell upon this particular day caused the specific injury. The jury so found. It was not a continuous condition, but a particular condition, which induced the hernia. This court has held that an accident is a happening which occurs by chance, unexpectedly, not in the usual course of events. \* \* \* Certainly the sustaining of an inguinal hernia, due to a coughing fit, is not a usual and customary incident to the occupation in which Polcen was engaged. If Polcen had fallen, and from the fall a hernia had resulted, this would have constituted an injury incurred in the course of employment. We see no essential difference in the case at bar.

After distinguishing several cases, the court said: "The facts in this record fall within the principles laid down in *Industrial Commission v. Roth*, 98 Ohio St. 34, 120 N. E. 172, where there was an accidental and unforeseen inhaling of a specific volatile poison or gas by an employee in the course of his employment."

The judgment was, therefore, affirmed.

## COOPERATION

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### Cooperation among Farmers in Nebraska

THE farmers who are members of the Farmers' Union of Nebraska are cooperating along many lines. This was brought out by reports rendered to the annual meeting held during January, 1930, an account of which is given in the January 29, 1930, issue of the Nebraska Union Farmer.

The Farmers' Union State Exchange at Omaha acts as wholesale for some 180 local cooperative societies, while it also operates 10 retail branches. This organization is the largest cooperative wholesale in the United States, its direct sales in 1929 amounting to \$2,001,725, and those of the branches about \$355,000. The net saving on the year's business amounted to \$50,583, of which \$22,068 will be returned in patronage dividends. In addition volume discounts of \$8,590 will be made on business of the Nebraska Farmers' Union State Oil Association (for which the Exchange acts as purchasing agent), bringing the total rebates to more than \$30,000. The expenses of the exchange were 6.14 per cent of the sales.

There are more than 50 cooperative oil associations in Nebraska, 46 of which make their wholesale purchases through a central organization, the Nebraska Farmers' Union State Oil Association. It is stated that these local associations had net savings on their 1929 business of about \$250,000.

Fire, lightning, and hail insurance are written through the Farmers' Union Cooperative Insurance Co. During 1929 this company wrote insurance to the amount of \$4,482,090, and at the end of the year the insurance in force aggregated \$43,038,273. The number of policy-holders is now 5,630. The total premium income for the year was \$67,701, and the net balance over expenses, \$5,566. Losses paid during the year included \$31,332 for loss by fire, \$5,890 for loss by lightning, \$7,111 for loss by wind, and \$42 for loss by hail. Since its organization the company has paid losses aggregating \$238,174.

Marketing activities are carried on through local livestock shipping associations, elevators, and creameries, while there are three central commission companies, two of which handle livestock and the third grain. The livestock commission company at St. Joseph handled 8,488 carloads of livestock in 1929 and collected on this business commissions amounting to \$148,994. The net gain was \$71,429. The commission company at Omaha handled 8,003 carloads of stock, collected \$132,887 in commissions, and had a net gain of \$64,146. These two associations will return patronage dividends amounting to 45 per cent of the commissions paid by the local societies.

The National Grain Commission Co. handled 1,067 carloads of grain (wheat, corn, oats, rye, and barley) in 1929. Commissions

totaled \$16,376 and net savings \$7,617. Early in 1929 a federation of cooperative elevators was formed, which will gradually take over the commission company, all the shares of which have hitherto been held by the Farmers' Union of Nebraska. Up to the time of the annual meeting 34 local elevator associations had affiliated with the new federation.

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### Cooperative Farming and Navvies' Societies in Hungary

#### Farming Societies

HERE are 58 cooperative farming societies which are members of the Central Institute of Credit Cooperative Societies of Hungary, according to Cooperative Information No. 16 (100), 1929, issued by the International Labor Office. These societies do not, themselves, engage in the actual farming operations. Their function is the lease of farm land, which is then parceled out among the members for individual farming. A member, on being allotted a plot of ground, pays into the society a specified sum which is a little higher than the amount of rent paid for the land by the society, the difference being put into a reserve fund. When the lease runs out, half of the reserve is divided pro rata among the members, while the other half is retained as a permanent reserve.

About 42,000 acres are at present being cultivated by the membership of the 58 societies.

The report points out that through the medium of these societies some 8,000 agricultural laborers and their families have been able to improve their circumstances and "attain a position of independence." "On the whole the results attained are very satisfactory, as the societies have not only conferred material benefits on their members but have also done much to improve agriculture through the use of modern methods of cultivation."

#### Navvies' Societies

ANOTHER interesting type of cooperative society is the navvies' societies, the first of which was started only five years ago. To-day there are 11 such societies.

These societies take contracts for such work as road construction, various kinds of public works, etc., the labor being performed by the members. Such societies are very uncommon, practically the only prototypes being found in the cooperative labor societies of Italy, though there is some similarity with the "nations" or dockers' societies of Belgium.

The report states that these Hungarian societies "are, without exception, functioning very successfully," and are already competing on equal terms with private contractors, with the result that "the latter have recently initiated a campaign" against them throughout the country. The cooperative societies, notwithstanding this opposition, have been awarded several orders for public works as well as the contract for "one of the most important road-building schemes in the country."

Not only do these societies provide employment for the members, they also are doing a great deal to raise the educational and cultural level of the members and their families. Thus, the societies pay for the education of the members' children, provide for an annual vacation for the children, and "in general, make every effort to raise the standard of living of their members, from all points of view."

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### Consumers' Cooperation in New South Wales

**A**N ACCOUNT of the development of the consumers' cooperative movement in New South Wales is given in the November, 1929, issue of the *Economic Record* (the Journal of the Economic Society of Australia and New Zealand), Melbourne.

According to this account, consumers' cooperation in New South Wales is already nearly three-quarters of a century old. The report points out that there has been nothing spectacular in its history. Although "its path has been strewn with failures; it is also true that, as a working-class movement, it is not only firmly established, but also a force in the struggle for the betterment of economic and social conditions."

The periodic rises and falls in the consumers' cooperative development in that country strikingly resembles those in the United States. The first consumers' societies were started in the sixties of the last century. Of this first group, only one society, a bakery, remains.

The author is of the opinion that some of this first growth was due to the spread of cooperative sentiment from England. Economic pressure also supplied a stimulus in the aftereffects of the gold rush of the fifties. The discovery of gold led to a great influx in population, to increased production, and to high prices. Labor was scarce and wages were high. As the gold output fell off, however, disappointed gold diggers were forced to return to the trades and industry, where the competition for jobs brought about by their return forced wages down; prices, however, continued to be high. Such conditions are favorable to a rising sentiment for cooperative effort.

During the seventies and early eighties the formation of societies proceeded slowly. When the "land boom" came, with conditions not unlike the earlier gold rush, the formation of societies took an upward trend. More than 50 societies were registered between 1886 and 1900, the great majority of which, however, "died in infancy," due mainly to conditions created by the maritime strike of 1891, the so-called "bank smash" of 1893, and the drought of 1894-1902.

Again came a lull in cooperative activity, which lasted until the pre-war period of rising prices set in. From 1905 to 1915 some 55 societies were registered, but only 45 were still in existence when the war broke out, and 4 of these were in liquidation. However, although the number of societies was not great, a substantial development had taken place in some of these. Their combined sales in 1914 amounted to £1,600,000 (\$7,786,400) and the surplus available for dividends to £245,000 (\$1,192,293).

During the war period "practically no new ground was broken, but substantial progress was made by the established societies." The postwar boom led to another lot of new societies, most of which failed

to survive the depression following the boom. During the three years after the armistice 31 societies were registered and in the next three years 22 societies. Since then they have averaged two per year. "The net increase in the number of societies during the post-war years appears to have been about 10."

To-day there are about 40 retail societies, with a combined membership of 41,000, share capital of about £630,000 (\$3,065,895), and annual sales of more than £3,000,000 (\$14,599,500).

More than a third of the societies, and practically all of the larger ones, are located in the coal-fields area. Failures in this region have been very few, attributed by the author to the community of interest of the people there, a comparatively stable population, prevalence of the cooperative spirit, organizing capacity, sentiment against private profit, and the ground gained by the societies in the pre-war years. The author states that "it would be almost impossible to overestimate what the movement in this State owes to the idealism, enthusiasm, and experience of the ex-British cooperators who have settled in these parts."

Rural cooperation has not been very successful, and all of the societies are "comparatively small and struggling." Thus far, little has been accomplished, and the author is of the opinion that there are no immediate prospects for a very great achievement. "The fundamental truth is that there is an absence of any real demand for it."

The New South Wales Cooperative Wholesale Society was formed in 1912. At present 16 societies are affiliated with it, but these represent 80 per cent of all the cooperators in the State. As the wholesale deals mainly in groceries, it supplies only about 30 per cent of the needs of the retail societies, many of which handle many other lines of goods besides groceries. The business of the wholesale amounted to £692,000 (\$3,367,618) in 1928.

Almost from the beginning of its operations the wholesale society has been manufacturing brooms "for which it has found a fair market, even outside cooperative enterprise." It also puts out, under its own label, some 30 different articles.

The author concludes that the consumers' cooperative movement is holding its own, but no more. The well-established societies "appear to be assured of a growth at least equal to that of their respective district," but these societies number only about half of the whole number. As for the others, their situation is more or less precarious. "Given favorable circumstances, all may survive, but it would take very little in the way of a trade depression or other unfavorable economic conditions, to launch them into bankruptcy." The discussion closes as follows:

The movement can grow intensively or extensively. Its intensive growth is reasonably likely to be steady but sure. The well-established societies are growing, and will probably continue to grow, in membership, output, and influence. It is much more difficult, however, to forecast the extensive growth of the movement. Generally, it may be said that the older the State grows, and the more settled its population becomes, the more will those conditions unfavorable to cooperative growth tend to disappear.

On the other hand, it is extremely doubtful if expansion in this State can be of great dimensions while the working classes place so much reliance in industrial and political action. In time the working classes may learn that there are many problems in their daily lives which can not be solved by either fighting or voting. If "Direct action" is to be the next step, why should it not be consumers' cooperation, which is certainly a form, and a practicable form, of direct action? A great deal depends upon the establishment of a strong cooperative union.

### Introduction of "Differential" Share Capital in Russia

THE Russian cooperative movement has taken a step which is a departure from accepted cooperative practice, or rather a modification of that practice. In order to make membership in cooperative societies easy for the poor person, it is the general cooperative practice to issue the shares in low denominations and, further, to allow the amount subscribed to be paid in installments.

Emphasizing that "the basic object of the Soviet cooperative movement is to attract the largest possible number of toilers, particularly the workers and poor peasants," some of the consumers' societies have constituted special funds to be used to pay for shares for persons so poor as to be unable to pay for them themselves. Workers and office employees who receive low wages are allowed extra time for the payment of their installments.

The latest step in this direction, according to Information Bulletin of the Centrosoyus, December 20, 1929, is the introduction of a system of shares of varying values for different groups of members, depending upon their incomes. The step was decided upon only after much discussion of its advisability had been had at membership meetings and in the press, during the past year.

Under the scheme adopted, the amount of share contributions required for membership in a cooperative society is, for "workers" and Soviet employees, according to the wages, as follows:

Monthly wages:	Capital subscription required (rubles <sup>1</sup> )
20 to 50 rubles	15
50 to 100 rubles	25
100 to 150 rubles	30
150 to 225 rubles	40
Over 225 rubles	50

Special rates are established for persons engaged in agriculture as follows: For poor persons exempt from the agricultural tax, 10 rubles; for middle-class peasants, 25 rubles; and for well-to-do peasants, 40 rubles.

A reduced share of 5 rubles is set for farm laborers, workers, and employees "whose earnings do not exceed the living minimum," and for war invalids and disabled workers whose pension does not exceed 20 rubles per month. Members in the Soviet Army and Navy and unemployed members of trade-unions (while unemployed) are not required to take out a share of stock but simply pay an entrance fee. Upon obtaining employment a trade-unionist must subscribe for stock, but may be given an extension of time in paying for it, depending upon the duration of the period of unemployment.

One-tenth of the amount of the share must be paid at time of admission, and the remainder must be paid within a period of three years in the case of village cooperatives and of two years in the case of the "workers'" cooperatives. Old members pay the difference between the amount of the old share and that established by the new scheme, also on the installment basis.

<sup>1</sup> Ruble at par=51.5 cents.

## PROFIT SHARING

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### Sharing Profits with Employees

A REPORT recently issued by the Policyholders Service Bureau of the Metropolitan Life Insurance Co. deals with the profit-sharing plans of a number of companies in this country and in Canada and England, the plans covered having in most cases been in successful operation for a number of years.

Information was secured covering 72 firms having active plans, several of the plans, in the many years of their existence, having successfully survived periods of business depression. Fifteen firms which were consulted were found to have discontinued profit sharing. For the purposes of this report profit sharing was defined as an agreement between an employer and his employees under which the employees receive a share, fixed in advance, of the profits of the firm. This excludes various bonuses given by the employer upon no pre-arranged basis, such as sales and production bonuses.

This study deals mainly with the details of the individual plans, but the following general statements are made as to the prevailing provisions. In general, it was found that the eligibility of employees depends upon length of service, the minimum period of employment ranging from one month to five years, with one year the most frequent requirement. The amount of money available for distribution may be calculated as a percentage of the net profits after dividends are paid or as a proportion of the dividends paid on common stock. The profit-sharing wage bonus is commonly distributed as a dividend on the wages of the year, each employee eligible for the bonus participating in proportion to his annual wage. Length of service is also recognized by a number of firms in the computation of the profit-sharing bonus. The distribution of wage dividends is usually made annually, the distribution frequently taking place at Christmas. Distribution of profits is ordinarily in cash, although some companies pay the profit-sharing bonus in the stock of the company or partly in cash and partly in stock. An employee usually forfeits his share in the profit-sharing dividend if he gives up his employment with the company before the dividend is declared or paid. In general, the plans do not provide for payment of a share in the profit-sharing fund to the heirs of a participating employee who dies before the profit-sharing dividends are declared, but a few cases are cited in which the proportion of profits due such an employee, based on his length of service during the year, is paid to the estate of the employee. An attempt was made to evaluate the results of the plans from the standpoint of the employer. While the influence of any one policy on industrial relations is difficult to determine, a number of companies expressed themselves as satisfied that it had had a satisfactory effect upon turnover and on the promotion of good employee relations. Several of the companies pointed to the fact that the plan had been in operation several years as proof that they had found it satisfactory to themselves and to their employees.

# LABOR TURNOVER

## Labor Turnover in American Factories

THE Bureau of Labor Statistics presents herewith its first report of labor turnover by industries. Six of the most important industries measured by the number of employees were selected for presentation beginning this month. Other industries will be added to the list from time to time.

In addition to the turnover indexes for combined industries, data are shown for automobiles, boots and shoes, cotton manufacturing, iron and steel, slaughtering and meat packing, and sawmills.

Table 1 shows for all industries the quit, lay-off, discharge, accession, and net turnover rates expressed both on a monthly and equivalent annual basis.

TABLE 1.—AVERAGE LABOR TURNOVER RATES IN SELECTED AMERICAN FACTORIES<sup>1</sup>

[The rate is per 100 employees on the pay roll. The monthly rate is the rate for the calendar month. The equivalent annual rate is the rate for the month expressed as an annual rate]<sup>2</sup>.

### A.—Monthly Rates

Month	Separation rates								Accession rate	Net turnover rate		
	Quit		Lay-off		Discharge		Total <sup>2</sup>					
	1929	1930	1929	1930	1929	1930	1929	1930				
January	2.26	1.11	0.35	1.04	0.45	0.24	3.06	2.39	4.98	2.01	3.06	2.01
February	2.38	—	.36	—	.46	—	3.20	—	4.36	—	3.20	—
March	3.12	—	.48	—	.57	—	4.17	—	5.20	—	4.17	—
April	3.56	—	.45	—	.57	—	4.58	—	5.77	—	4.58	—
May	3.46	—	.48	—	.48	—	4.42	—	5.00	—	4.42	—
June	3.25	—	.44	—	.51	—	4.20	—	5.01	—	4.20	—
July	3.03	—	.42	—	.49	—	3.94	—	5.21	—	3.94	—
August	3.26	—	.41	—	.45	—	4.12	—	4.61	—	4.12	—
September	3.14	—	.52	—	.50	—	4.16	—	4.91	—	4.16	—
October	2.42	—	.80	—	.40	—	3.62	—	3.91	—	3.62	—
November	1.59	—	1.26	—	.30	—	3.15	—	1.95	—	1.95	—
December	1.08	—	1.21	—	.20	—	2.49	—	1.24	—	1.24	—
Average	2.71	—	.60	—	.45	—	3.76	—	4.35	—	3.76	—

### B.—Equivalent Annual Rates

January	26.7	13.1	4.2	12.2	5.3	2.8	36.2	28.1	58.6	23.7	36.2	23.7
February	31.0	—	4.7	—	6.0	—	41.7	—	56.9	—	41.7	—
March	36.8	—	5.7	—	6.7	—	49.2	—	61.2	—	49.2	—
April	43.3	—	5.5	—	6.9	—	55.7	—	70.2	—	55.7	—
May	40.8	—	5.7	—	5.6	—	52.1	—	59.9	—	52.1	—
June	39.5	—	5.4	—	6.2	—	51.1	—	60.9	—	51.1	—
July	35.7	—	5.0	—	5.8	—	46.5	—	61.4	—	46.5	—
August	38.4	—	4.8	—	5.3	—	48.5	—	54.3	—	48.5	—
September	38.2	—	0.3	—	6.1	—	50.6	—	59.7	—	50.6	—
October	28.5	—	9.4	—	4.7	—	42.8	—	46.0	—	42.8	—
November	19.4	—	15.3	—	3.7	—	38.4	—	23.7	—	23.7	—
December	12.7	—	14.2	—	2.4	—	29.3	—	14.6	—	13.5	—
Average	32.6	—	7.2	—	5.4	—	45.2	—	52.3	—	45.2	—

<sup>1</sup> The form of average used is the unweighted median of company rates.

<sup>2</sup> Arithmetic sum of quit, lay-off, and discharge rates.

The separation rate for January, 1930, is slightly higher than the accession rate, but, while in December, 1929, the separation rate was 1.25 points higher than the accession rate, during January it was only 0.38 of a point higher. The January, 1930, quit rate was 1.11 compared with 1.08 in December and 2.26 in January, 1929. The lay-off rate, while it was higher than in January, 1929, was lower than for either November or December, 1929. The January, 1930, lay-off rate was 1.04 compared with 1.21 in December and 0.35 in January, 1930. The accession rate while much lower than during January, 1929, was higher than for either November or December, 1929. The accession rate for January, 1930, was 2.01. In January, 1929, it was 4.98 and in December, 1929, 1.24.

Table 2 shows the quit, discharge, lay-off, and accession rates for automobiles, boots and shoes, cotton manufacturing, iron and steel, slaughtering and meat packing, and sawmills, expressed both on a monthly and on an equivalent annual basis.

TABLE 2.—AVERAGE LABOR TURNOVER RATES IN AUTOMOBILES, BOOTS AND SHOES, COTTON MANUFACTURING, IRON AND STEEL, SLAUGHTERING AND MEAT PACKING, AND SAWMILLS

[The rate is per 100 employees on the pay roll. The monthly rate is the rate for the calendar month. The equivalent annual rate is the rate for the month expressed as an annual rate]

Item	Combined industries <sup>1</sup>	Automobiles	Boots and shoes	Cotton manufacturing	Iron and steel	Slaughtering and meat packing	Sawmills
<i>January, 1930</i>							
Monthly:							
Quits	1.11	1.27	1.51	1.20	1.37	1.60	1.57
Discharges	.24	.59	.46	.11	.23	.51	.44
Lay offs	1.04	2.22	.28	.29	1.63	1.52	1.77
Total separations	2.39	4.08	2.25	1.60	3.23	3.63	3.78
Accessions	2.01	8.20	5.26	2.40	3.87	4.08	2.54
Equivalent annual:							
Quits	13.1	15.0	17.8	14.2	16.1	18.9	18.5
Discharges	2.8	7.0	5.4	1.3	2.8	6.0	5.2
Lay offs	12.2	26.2	3.3	3.4	19.2	17.9	20.9
Total separations	28.1	48.2	26.5	18.9	38.1	42.8	44.6
Accessions	23.7	96.9	61.9	28.3	45.6	48.1	29.9

<sup>1</sup> Composite weighted index of more than 75 industries.

Automobiles, boots and shoes, cotton manufacturing, iron and steel, and slaughtering and meat packing all showed a greater accession than separation rate. Sawmills showed a slightly higher separation rate than accession rate.

Automobiles, iron and steel, slaughtering and meat packing, and sawmills showed both a higher separation and a higher accession rate than the combined index showed. Boots and shoes and cotton showed a lower separation rate and a higher accession rate than the index for all industries.

The highest quit rate shown was in slaughtering and meat packing. The highest discharge, lay-off, and accession rates were shown by the automobile industry.

# INDUSTRIAL DISPUTES

## Strikes and Lockouts in the United States in January, 1930

**D**ATA regarding industrial disputes in the United States for January, 1930, with comparable data for preceding months, are presented below. Disputes involving fewer than six workers and lasting less than one day have been omitted.

Table 1 is a summary table showing for each of the months—January, 1927, to January, 1930, inclusive—the number of disputes which began in those months, the number in effect at the end of each month, and the number of workers involved. It also shows, in the last column, the loss (in man-days) occasioned.

**TABLE 1.—INDUSTRIAL DISPUTES BEGINNING IN AND IN EFFECT AT END OF EACH MONTH, JANUARY, 1927, TO JANUARY, 1930**

Month and year	Number of disputes—		Number of workers involved in disputes—		Number of man-days lost during month
	Beginning in month	In effect at end of month	Beginning in month	In effect at end of month	
<b>1927</b>					
January	37	18	5,915	2,287	58,125
February	65	45	9,756	5,717	115,229
March	74	67	13,142	8,182	214,283
April	87	88	202,406	199,701	5,265,420
May	107	116	22,245	200,702	5,136,006
June	80	88	18,957	196,323	4,863,345
July	65	63	33,994	199,287	5,308,123
August	57	53	8,150	198,444	4,999,751
September	57	58	12,282	196,829	4,945,702
October	50	58	13,024	82,095	2,724,117
November	27	51	5,282	82,607	2,040,140
December	28	54	4,281	81,229	2,129,153
<b>1928</b>					
January	48	63	18,850	81,880	2,128,028
February	52	58	33,441	103,496	2,145,342
March	41	47	7,459	76,069	2,291,337
April	71	48	143,700	129,708	4,806,232
May	80	56	15,640	133,546	3,455,499
June	44	46	31,381	143,137	3,670,878
July	54	42	18,012	132,187	3,337,386
August	59	42	8,887	105,760	3,553,750
September	52	34	8,897	62,862	2,571,982
October	61	42	27,866	41,474	1,304,913
November	44	38	37,840	38,745	1,300,362
December	23	29	5,172	35,842	991,238
<b>1929</b>					
January	45	34	14,727	39,484	949,692
February	48	34	20,134	40,385	921,583
March	77	42	14,052	41,321	1,094,161
April	103	52	30,130	52,292	1,429,046
May	98	73	26,230	58,959	1,578,929
June	69	71	19,702	54,984	1,526,627
July	74	75	35,900	21,872	1,116,557
August	68	55	25,138	8,123	380,681
September	95	62	19,224	8,818	259,410
October	66	42	17,368	8,326	290,634
November	59	39	11,369	7,320	225,482
December	36	34	3,520	3,825	129,484
<b>1930</b>					
January <sup>1</sup>	32	37	9,579	7,504	284,217

<sup>1</sup> Preliminary figures subject to change.

## Occurrence of Industrial Disputes, by Industries

TABLE 2 gives, by industry, the number of strikes beginning in November and December, 1929, and January, 1930, and the number of workers directly involved.

TABLE 2.—INDUSTRIAL DISPUTES BEGINNING IN NOVEMBER AND DECEMBER, 1929, AND JANUARY, 1930

Industry	Number of disputes begin- ning in—			Number of workers involved in disputes beginning in—		
	Novem- ber	Decem- ber	January	Novem- ber	Decem- ber	January
Auto, carriage, and wagon workers		1	1		44	23
Bakers	3	1		186	6	
Barbers	1		1	6		120
Building trades	14	3	4	1,878	30	138
Chauffeurs and teamsters	6	3	3	546	61	1,561
Clerks		1			10	
Clothing	10	5	2	4,968	211	3,100
Food workers	1			28		
Furniture	2		1	78		17
Hotel and restaurant employees		1	1		15	15
Iron and steel	2			765		
Metal trades	2		4	50		118
Miners	4	9	5	1,060	1,828	2,678
Motion-picture operators, actors, and the- ater employees	1			130		
Oil and chemical workers	1			100		
Paper and paper goods workers	1			12		
Pottery workers	1			40		
Printing and publishing	-	1	1	6	12	
Rubber		1			405	
Slaughtering and meat packing			1			8
Municipal workers	1			325		
Textiles	7	7	8	591	655	1,792
Tobacco		1			200	
Other occupations	1	2	1	600	43	9
Total	59	36	32	11,369	3,520	9,579

## Size and Duration of Industrial Disputes, by Industries

TABLE 3 gives the number of industrial disputes beginning in January, 1930, classified by number of workers and by industries:

TABLE 3.—NUMBER OF INDUSTRIAL DISPUTES BEGINNING IN JANUARY, 1930,  
CLASSIFIED BY NUMBER OF WORKERS AND BY INDUSTRIES

Industry	Number of disputes beginning in January, 1930, involving—				
	6 and under 20 workers	20 and under 100 workers	100 and under 500 workers	500 and under 1,000 workers	1,000 and under 5,000 workers
Auto, carriage, and wagon workers		1			
Barbers			1		
Building trades		1	3		
Chauffeurs and teamsters		2			1
Clothing				1	1
Furniture	1				
Hotel and restaurant employees	1				
Metal trades	1	3			
Miners			3	1	1
Slaughtering and meat packing	1				
Textiles	1	4	2		1
Other occupations	1				
Total	7	13	6	2	4

In Table 4 are shown the number of industrial disputes ending in January, 1930, by industries and classified duration:

TABLE 4.—NUMBER OF INDUSTRIAL DISPUTES ENDING IN JANUARY, 1930, BY INDUSTRIES AND BY CLASSIFIED DURATION

Industry	Classified duration of strikes ending in January						
	One-half month or less	Over one-half and less than 1 month	1 month and less than 2 months	2 months and less than 3 months	3 months and less than 4 months	4 months and less than 5 months	9 months and less than 10 months
Auto, carriage, and wagon workers.....	1						
Barbers.....	1						
Building trades.....	1	2		1			
Chauffeurs and teamsters.....	3						
Clothing.....	1	1		1	1		
Metal trades.....	2						
Miners.....	2	2					
Slaughtering and meat packing.....	1						
Textiles.....	3		1	1		1	1
Other occupations.....	1	1					
Total.....	16	6	1	3	1	1	1

#### Principal Strikes and Lockouts Beginning in January, 1930

*Garment workers, Ohio.*—A general strike of organized garment workers in Cleveland began on January 7. This strike, among others, had been authorized at a convention of the International Ladies' Garment Workers' Union held at Cleveland early in December. The union demands included a 40 instead of 44 hour week, elimination of alleged sweatshop conditions, guaranty of workers' wages in contracting shops, and preference for skilled Cleveland cloak and dress workers in the distribution of work before it is sent outside the city.

Approximately 2,500 workers were involved in this strike, which affected more especially two general groups of employers, one aligned with the "American Plan" manufacturers, and a second group of 10 or 11 manufacturers, most of whom are members of the Cleveland Ladies' Garment Manufacturers Association, which has had contractual relations with the union. The association contended that to allow the 40-hour week would be equivalent to a 10 per cent increase in wages, which would be placing an unbearable burden upon its members.

An agreement between union officials and the association manufacturers, otherwise referred to as the union shop manufacturers, was reached on January 8, subject to approval by the union membership, which was accorded in a mass meeting on January 10.

Reports from union sources indicate that practically all demands were acceded to by this group of manufacturers except that for a week of 40 hours, which was compromised, a 5-day 42-hour week being agreed to.

It is understood that a large independent manufacturer, Printz-Biederman & Co., signified its intention to observe the terms of the general agreement, although the company did not sign it.

The agreement became operative January 13, and according to press reports includes the following provisions:

1. The immediate establishment of the 5-day 42-hour week, instead of the present 44-hour week.
2. Inside manufacturers agree to confine their outside production exclusively to union contracting shops.
3. Inside manufacturers agree to guarantee one week's wages in contracting shops in the event of default by the contractors.
4. Preference of work given to all Cleveland cloak and dress makers before goods are sent outside the city to be made up.

The manufacturers affiliated with the American Plan Association refused to treat with the union and it was announced that the strike against those plants, involving some 500 or 600 workers, would continue.

By the afternoon of January 16 about 75 per cent of the strikers had returned to work, and by the end of the month the strike, it is understood, was practically over.

*Textile (hosiery) workers, Philadelphia.*—A strike of approximately 1,300 employees of the H. C. Aberle Co., hosiery manufacturers, began on January 7, against a wage reduction, ranging, it is said, from 12 to 30 per cent and affecting some of the force. Some of the workers are affiliated with the American Federation of Full Fashioned Hosiery Workers, Local No. 706. This strike is still in progress.

*Taxicab drivers, Pennsylvania.*—Taxicab drivers in Pittsburgh employed by the Green and Yellow cab companies, which have recently come under the control of the Parmelee Transportation Co., struck on January 12 to enforce demands including union recognition, a 6 instead of a 7 day week, a 10 instead of a 12 hour day, company instead of drivers to pay for repairs after accidents, a 40 per cent commission on receipts instead of \$3 on the first \$9 as under the old scale. Approximately 1,500 drivers are said to be involved, including some from outlying districts.

According to press reports, a compromise agreement settling the strike was accepted by a standing vote of the strikers on January 20, following conferences initiated by the United States Secretary of Labor, but on January 21 the men voted by ballot to reject the proposed agreement and to continue the strike. The terms suggested as a basis of settlement follow:

1. Men to return to work as early as possible without any discrimination and without prejudice on either side and upon the basis of being restored to their former respective positions with full seniority rights, provided the men report for work, or in case of sickness indicate a desire to work, on or before January 23. It is understood, however, that this will not affect or impair the rights of the company to manage or operate their respective properties.
2. The basis of compensation to be as follows: Namely, payment at the rate of 37½ per cent of the gross receipts for each driver as shown by his meter. This basis to apply in all cases without reference to the number of days per week or the hours of service.
3. The former practice of requiring a deposit for tools furnished to each cab to be abandoned.
4. In order to meet the need for some sort of employee representation a committee of 7, 4 from the Yellow Cab and 3 from the Green Cab shall be selected by the drivers employed by the company, and the ballot shall be deposited in a suitable receptacle placed at a location where all may vote during working hours, who will confer with the company representatives, not more than three, to prepare and provide a plan for employee representation and cooperation.

In the event of any final disagreement between the committee of men and management with respect to any details of this plan, such disagreement shall be referred to James J. Davis, Secretary of Labor, for his consideration and final disposal.

It is also understood that the above applies to the Red Cab Co., they to have a committee of three.

The agreement was rejected, it is said, because the strikers insisted on receiving 40 per cent of receipts, as shown by meter, and on union recognition.

*Button and novelty workers, New York City.*—A strike of approximately 600 button and novelty workers, called by the Button and Novelty Makers' Union, is reported to have begun on January 14, affecting some 63 button and novelty shops. This strike, it is understood, was practically ended by January 20.

The union demands, according to press reports, included a 44 instead of 50 hour week, 6 legal holidays with pay, recognition of the union, equal division of work in slack season, and wage increases. In the settlements reported the workers gained, it is said, a minimum wage that will average \$36 a week, or about \$10 a week above the previous scale, additional gains being the closed shop, equal division of work in the slack season, and the 44-hour week.

#### Principal Strikes and Lockouts Continuing into January, 1930

*Millinery workers, Chicago.*—The lockout of millinery workers which began on November 15 appears to be still in progress.

*Bituminous coal miners, Illinois.*—The strike of 500 miners beginning December 31, involving the Franklin County Coal Co., near Herrin, is understood to have ended by January 30, but the terms of settlement have not been reported.

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#### Conciliation Work of the Department of Labor in January, 1930

By HUGH L. KERWIN, DIRECTOR OF CONCILIATION

THE Secretary of Labor, through the conciliation service, exercised his good offices in connection with 41 labor disputes during January, 1930. These disputes affected a known total of 27,837 employees. The table following shows the name and location of the establishment or industry in which the dispute occurred, the nature of the dispute (whether strike or lockout or controversy not having reached the strike or lockout stage), the craft or trade concerned, the cause of the dispute, its present status, the terms of settlement, the date of beginning and ending, and the number of workers directly and indirectly involved.

On February 1, 1930, there were 48 strikes before the department for settlement and in addition 22 controversies which had not reached the strike stage. The total number of cases pending was 70.

## LABOR DISPUTES HANDLED DURING THE MONTH OF JANUARY, 1930

## INDUSTRIAL DISPUTES

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Company or industry and location	Nature of controversy	Craftsmen concerned	Cause of dispute	Present status and terms of settlement	Duration		Workers involved Indirectly
					Begin-ning	End-ing	
Ohio Lanning Chemical Co., Philadelphia, Pa.	Lockout.	Teamsters-----	Teamsters joined union and asked recognition; locked out by company.	Unable to adjust. Transportation discontinued by company.	1929 Dec. 23	1929 Dec. 30	13 -----
Cod teamsters, Chicago, Ill.	Threatened strike.	do-----	Working conditions.	Adjusted. Allowed increase from \$8.10 to \$8.50 per day; helpers from \$6.10 to \$6.50 per day; "hikers" from 10 to 15 cents per ton.	1930 Dec. 29	1930 Jan. 25	8, 150 -----
Terminal Warehouse Co., Philadelphia, Pa.	Strike-----	Truck drivers-----	Hauling of material for Lanning Co., whose drivers were on strike for recognition.	Unclassified. Eight returned; others refused. Commissioner not engaged.	Dec. 31	Jan. 9	18 8
Building trades, Des Moines, Iowa.	Threatened strike.	Plumbers, steam-fitters, and 9 other crafts.	Firing for temporary heat.	Adjusted. Satisfactorily arranged.	Dec. 26	Jan. 21	16 116
[593] Hardwick & Magee Carpet Co., Philadelphia, Pa.	Strike-----	Dyers and helpers-----	Asked 70 cents per hour—7-cent increase.	Places filled.	Dec. 5	Mar. 5	48 -----
Palace Theater, Fort Wayne, Ind.	Controversy.	Musicians-----	Salary and number of persons in orchestra.	Adjusted. 1-year contract allowing leader \$80 per week and 6 other persons at \$55 per week.	Dec. 15	Jan. 20	7 361
Courthouse building, Erie, Pa.	do-----	Electricians engaged on telephone installation.	Employment of nonunion labor.	Adjusted. County commissioners had telephones installed by union men.	1930 Jan. 2	Feb. 6	10 50
Witherspoon & Simpson Glass Co., Fort Smith, Ark.	do-----	Flint-glass workers-----	Wage cut.	Pending	do-----	do-----	36 30
St. Louis Platers Association, St. Louis, Mo.	Threatened strike.	Platers-----	Wages cut 25 cents per hour.	Adjusted. Former wages continued without cut; 95 cents per hour.	Jan. 6	Jan. 15	62 180
McKinney Hinge Co., Pittsburgh, Pa.	Strike-----	Platers and polishers.	Discharges and working conditions.	Adjusted. Men reinstated.	Jan. 2	Jan. 4	60 40
H. C. Aberle Hosiery Mill, Philadelphia, Pa.	do-----	Hosiery workers-----	Employees alleged 5 to 30 per cent wage cut; company claimed 5 to 8½ per cent.	Unable to adjust.	Jan. 7	-----	1,300 100
Lafarge Coal & Navigation Co., Tamaqua, Pa.	do-----	Minees-----	Unpaid union dues.	Adjusted. Union dues paid; miners returned.	Jan. 6	Jan. 6	860 20
Ent Electric Co., Salem, Ore.	Controversy.	Electricians-----	Asked increase of \$1 per day and double time for overtime.	Adjusted. 2-year agreement allowing \$8.50; increase, 50 cents per day.	Jan. 1	Jan. 8	17 -----
Wonder Heating & Ventilating Systems, Chicago, Ill.	Strike-----	Sheet-metal workers.	Alleged violation of rules.	Adjusted. Returned to work.	Jan. 4	Jan. 24	4 2
Fruit and vegetable workers, southern California.	Threatened strike.	Garden workers-----	Asked wage increase.	Adjusted. Remained at work without change; conditions now normal.	Jan. 9	Jan. 16	5, 000 5, 000

## MONTHLY LABOR REVIEW

## LABOR DISPUTES HANDLED DURING THE MONTH OF JANUARY, 1930—Continued

Company or industry and location	Nature of controversy	Craftsmen concerned	Cause of dispute	Present status and terms of settlement	Duration		Workers involved Indirectly
					Beginning	Ending	
Philco Radio Corporation, Philadelphia, Pa.	Strike	Radio workers	Wages for piecework	Unclassified. No cut; settled before arrival of commissioner.	1930 Jan. 3	1930 Jun. 15	26 -----
Sunrise Knitting Mills, Philadelphia, Pa.	do.	Knitters	Wages cut 20 per cent—from \$1.39½ to \$1.10 per dozen. Wages, working conditions, and union recognition.	Pending -----	Jan. 2	-----	9 21
Green and Yellow Taxicab Cos., Pittsburgh, Pa.	do.	Drivers	do	do	Jan. 12	-----	1,500 -----
Charlton Mill, Fall River, Mass.	do.	Weavers	Company asked weavers to operate 8 looms instead of 6 on certain material. Wages cut ¼ cent per yard for weaving.	Adjusted. Continued with 6 looms; wages cut 5 per cent.	Jan. 13	Jan. 21	75 -----
McCullom & Post, Nazareth, Pa.	do.	Silk weavers	Employment of nonunion labor.	Adjusted. All returned; accepted entire do	do	Jan. 22	30 20
Frank Hill-Smith Construction Co., Dayton, Ohio.	Threatened strike.	Building	do	Adjusted. Company conceded to demands of trades and relinquished job before arrival of commissioner. Places filed.	Jan. 16	Jan. 16	55 -----
Middle West Hat Co., Cleveland, Ohio.	Lockout	Hatters	do	Adjusted. Accepted company's terms pending improvement in business conditions.	Dec. 9	Dec. 14	20 -----
Winders and warpers, York, Pa.	Strike	Winders and warpers.	Warpers cut from \$1 to 80 cents per thousand ends; winders from 10 to 8 cents per pound. Company discharged 2 miners for alleged illegal drilling.	Accepted company's terms pending improvement in business conditions. Arbitrator's decision provided for reinstatement of the 2 men and pay for time lost.	Jan. 10	Jan. 14	45 300
Vermillion Mine, Clinton, Ind.	Controversy	Miners	do	Adjusted. Arbitrator found no neglect on the part of the mining company.	Jan. 15	Jun. 19	2 -----
Little Daisy Mine, Linton, Ind.	do.	do	Two miners asked pay for time lost on account of water in working place.	Adjusted. Union men employed.	do	Jan. 28	2 -----
Telephone building, Dayton, Ohio.	Strike	Steam-shovel men.	Employment of nonunion labor.	Adjusted. Union men employed.	Jan. 20	Jan. 23	15 -----
Rainier National Park	Controversy	Forest workers	Wages temporarily withheld until fire fighters were paid.	Adjusted. Wages paid.	Jan. 2	Feb. 3	19 -----
Kuppler Bros. contractors, Port Angeles, Wash.	do.	Carpenters	Failure to employ local union carpenters at local union wages.	Adjusted. Local union carpenters employed at local union wages.	Jan. 21	Jan. 24	110 340
Button manufacturers, 63 firms, New York City.	Strike	Button and novelty workers.	Asked wage increase, 44-hour week and union recognition.	Adjusted. Increased \$10 per week, to \$36; 44-hour week and recognition.	Jan. 14	Jan. 20	600 1,000
Acme Works (Inc.), Indianapolis, Ind.	do.	Metal polishers	Asked signed agreement.	Pending -----	Jan. 10	-----	19 30
Paramount Theater Building, Fort Wayne, Ind.	Controversy	Building crafts	Open or closed shop on this job.	do	Jan. 18	-----	600 -----

Brown & Sharpe Mfg. Co., Providence, R. I.	do	Machine-shop men	Reduction of force due to lack of orders.	Jan. 16	500
Presbyterian Church, Wilmington, Del.	Building	Employment of nonunion labor.	Adjusted. Threatened strike averted in conference.	Jan. 20	50
State College Auditorium, Newark, N.J.	do	do	do	Jan. 21	30
Great Lakes Stages (Inc.), Scranton, Pa.	Strike	Bus drivers	Adjusted. 26 drivers returned. Other places filled by new men.	Jan. 23	34
Garment workers, Oskaloosa, Iowa	do	Garment workers	Pending.	Jan. 25	250
Board of Trade Building, Chicago, Ill.	do	Building	Adjusted. Contractor withdrew; new contract with union contractor.	Jan. 24	400
Detroit Stove Co., Detroit, Mich.	do	Enamelers and sand blasters.	Places filled.	Jan. 25	35
Big Four Building, Indianapolis, Ind.	do	Tile layers' helpers	Adjusted. Allowed recognition, increase, and 3-year contract.	Jan. 20	80
Tower Building, Indianapolis, Ind.	do	do	do	do	8
Great Lakes Stages (Inc.), Cleveland, Ohio.	do	Drivers	Some new employees.	Jan. 18	36
Total				20,084	7,753

### Steps to End Jurisdictional Disputes in the Building Trades

**A**T A joint conference between representatives of the National Association of Building Trades Employers and the building trades department of the American Federation of Labor, held at Tampa, Fla., during the latter part of January, 1930, an agreement was reached to formulate a plan for the elimination of jurisdictional strikes in the building trades.

By the terms of the agreement a committee of three from each group was appointed to work out the details of the plan. This committee consists of James J. Scully, president of the Building Trades Employers Association of Boston, Oscar W. Rosenthal of Chicago, and Christian G. Norman of New York, representing the employers; and Michael J. McDonough, president of the building trades department of the American Federation of Labor, P. J. Morrin, president of the International Association of Bridge, Structural and Ornamental Iron Workers, and John J. Hynes, president of the Sheet Metal Workers International Association.

While no definite plan has been agreed upon in its entirety, there has been a mutual understanding that an endeavor will be made to prevent jurisdictional disputes pending the adoption of the plan.

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### Strikes in Spain, 1918 to 1928

**O**FFICIAL bulletins<sup>1</sup> issued by the Spanish General Labor Office give the number of strikes in Spain as well as their causes. These data are shown in the following table:

NUMBER OF STRIKES IN SPAIN, BY CAUSES, 1918, 1920, 1923, 1927, AND 1928

Year	Number of strikes due to specified causes						Total number of strikes
	Wages	Hours of work	Organization of labor	Association and staff questions	Wages combined with other claims	Other causes	
1918	285	16	28	62	65	7	463
1920	602	18	60	104	116	160	1,060
1923	141	3	38	123	56	56	417
1927	37	5	10	37	15	3	107
1928	39	5	7	16	10	10	87

<sup>1</sup> Spain, Ministerio de Trabajo y Previsión. Dirección General de Trabajo. Estadística de las huelgas, 1927 and 1928, Madrid, 1929; International Labor Office. Industrial and Labor Information, Geneva, Feb. 2, 1925, pp. 9, 10.

## **LABOR AGREEMENTS, AWARDS, AND DECISIONS**

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### **Agreements**

#### **National Agreement—Full-Fashioned Hosiery Workers**

**T**HE American Federation of Full-Fashioned Hosiery Workers on September 1, 1929, entered into a national agreement with the Full-Fashioned Hosiery Manufacturers of the United States.

This agreement provides for nationally uniform conditions, a 48-hour week divided into 5 days of 8½ hours and 4¼ hours on Saturday, a scale of piece prices, and a definite hourly rate in addition to the piece rate for all overtime. It also makes the following provisions for the settlement of disputes:

All grievances arising in any shop shall be adjusted by the union and the employer involved; in the first instance such grievances shall be submitted to the shop committee and the shop foreman or superintendent representing the employer, and in the event that they can not adjust such grievances, the matter shall then be submitted to the officials of the union and the officials of the employer. In the event the union and the employer can not agree, the grievance shall be referred to the impartial chairman for settlement, who shall give his decision not later than 10 days after the case has been referred to him. His decision shall be final.

The impartial chairman shall be Paul Abelson, of New York City, who is hereby designated to act throughout the term of this agreement. In the event of his death or resignation his successor shall be chosen by a committee representing the employer and a committee representing the union, within 15 days thereafter.

The compensation and expenses of such impartial chairman shall be borne jointly by both groups.

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#### **Impartial Chairman Appointed for Cleaning and Dyeing Industry—Chicago**

AN AGREEMENT between the Chicago Master Cleaners and Dyers Association and the Cleaners, Dyers, and Pressers Union, Local No. 17742, and the Laundry and Dye House Drivers and Chauffeurs Union, Local No. 712, was made on December 27, 1929, which provided for the appointment of Dr. B. M. Squires as impartial chairman with authority to advise the parties to the agreement on all matters affecting the cleaning and dyeing industry.

By the terms of this agreement the impartial chairman shall advise the Chicago Master Cleaners and Dyers Association and Local No. 17742 of the Cleaners, Dyers, and Pressers Union in relation to the drafting of an agreement covering wages, hours, and working conditions, and shall decide all questions in relation to the drafting of such agreement upon which the parties themselves can not agree, "taking into consideration competitive and economic conditions in the Chicago trading area, the productive capacity of the employees, the cost of living as affecting the employees and their families, and such other

points as in his judgment may seem proper and wise," and shall administer the agreement during the period for which it is effective.

The agreement also provides that the impartial chairman shall administer the agreement which now exists between the Chicago Master Cleaners and Dyers Association and the Laundry and Dye House Drivers and Chauffeurs Union, Local No. 712, and decide any dispute which may arise under such agreement. At the expiration of the existing agreement the impartial chairman shall advise the parties to the agreement in relation to the drafting of a new agreement covering wages, hours, and working conditions, and shall administer such agreement during the period for which it is effective.

In all other matters which may hereafter be submitted to the impartial chairman by the parties to this agreement, his decision shall be final and binding. The salary of the impartial chairman and all expenses incidental to the performance of his duties and the establishment and maintenance of his office shall be paid jointly in equal shares by the parties to this agreement.

### Decisions

#### **Laborers of Denver, Colo., Refused an Increase in Wages**

THE Industrial Commission of Colorado, having been notified by Local No. 720 of the Hod Carriers, Building and Common Laborers Union of a demand upon their employers for an increase in wages, granted a hearing on January 7, 1930. The demand of the employees was as follows: For work with plasterers, an increase from \$7 to \$8.50 per day; for mixing and handling brick mortar, an increase from \$6.75 to \$8 per day; and for carrying or wheeling bricks, an increase from \$6.50 to \$8 per day.

In making its decision the commission called attention to the following statement by William Green, president of the American Federation of Labor, under date of November 27, 1929, after the conference called by the President of the United States, to consider the industrial situation and discuss methods to promote prosperity.

It might be well to observe in considering the existing industrial situation that labor has learned from experience that movements for special increases in wages can not be successfully launched at a time when the Nation has sustained a severe shock as a result of the destruction of billions of dollars in values resulting in the curtailment of the buying power of the millions of victims who may have lost all they possessed. I am of the opinion that all should be on guard against any attempt to reduce wages. Local unions should be requested to watch carefully any attempt which may be made to lower the wage standards. Such an attempt on the part of any employer would be regarded as an evidence of bad faith and as being in direct contradiction to the statement made by the employers' group which met with the President of the United States prior to the conference with the representatives of labor and pledged themselves individually "that they will not initiate any movement for wage reduction and it was their strong recommendation that this attitude should be pursued by the country as a whole."

On January 14, 1930, the commission made the following decision and award:

The commission has given very careful and serious consideration to the evidence introduced at this hearing and has also considered the statement made by Mr. Green as quoted above.

Therefore, it is the award and decision of the commission that the demand of the above-named union for an increase in wages be refused and that no increase in wages be granted to said employees at this time.

# HOUSING

## Building Permits in Principal Cities, January, 1930

**R**EPORTS of building permits issued during January were received from 291 cities of the United States having a population of 25,000 or over. Comparative figures for December were received from 283 cities. There are 319 cities in the United States having a population of 25,000 or over. The 291 cities reporting for January comprise 91.2 per cent of all cities of 25,000 or over.

The costs shown in the tables below are for buildings for which permits were issued in the corporate limits of the cities named. No land costs are included.

The States of Illinois, Massachusetts, New Jersey, New York, and Pennsylvania, through their departments of labor, are cooperating with the Bureau of Labor Statistics in collecting this information.

Table 1 shows the total estimated cost of new residential buildings, new nonresidential buildings, total building operations (including alterations and repairs), and families provided for in new buildings, by districts, as shown by permits issued, together with the percentage of increase or decrease in January, 1930, as compared with December, 1929.

TABLE 1.—ESTIMATED COST OF NEW RESIDENTIAL BUILDINGS, NEW NONRESIDENTIAL BUILDINGS, AND TOTAL BUILDING OPERATIONS IN 283 CITIES OF THE UNITED STATES HAVING A POPULATION OF 25,000 OR OVER, BY GEOGRAPHIC DIVISIONS

Geographic division	New residential buildings				New nonresidential buildings, estimated cost		Total construction (including alterations and repairs), estimated cost	
	Estimated cost		Families provided for in new dwelling houses					
	December, 1929	January, 1930	December, 1929	January, 1930	December, 1929	January, 1930	December, 1929	January, 1930
New England.....	\$2,614,700	\$2,211,200	403	414	\$7,361,520	\$8,391,960	\$11,446,033	\$7,276,277
Middle Atlantic.....	13,304,700	10,710,865	2,099	2,027	26,438,915	23,358,067	47,994,324	40,898,791
East North Central.....	7,568,496	7,665,728	1,660	1,341	19,871,428	12,492,150	29,982,488	22,660,396
West North Central.....	996,065	763,565	264	214	2,090,124	1,078,765	3,910,357	2,403,799
South Atlantic.....	3,153,755	4,270,741	271	714	3,238,421	4,868,897	8,021,532	10,422,577
South Central.....	1,814,527	1,853,202	597	602	5,736,709	2,610,917	9,555,322	5,656,000
Mountain and Pacific.....	5,523,950	6,622,260	1,691	1,338	4,382,055	12,023,223	12,553,974	20,737,989
Total.....	34,976,193	34,097,561	6,985	6,650	69,119,172	59,823,979	123,464,030	110,064,828
Per cent of change.....		-2.5		-4.8		-13.4		-10.9

The estimated cost of all building operations for which permits were issued in these 283 cities during the month of January was \$110,064,828, a decrease of 10.9 per cent as compared with the \$123,464,030 which the December permits showed.

New residential buildings decreased 2.5 per cent in estimated expenditures, comparing the January permits with the December

permits, while nonresidential buildings decreased 13.4 per cent. Families provided for decreased 4.8 per cent. There were 6,650 families provided for in the new buildings for which permits were issued during January in these 283 cities compared with 6,985 families provided for by the December, 1929, permits.

Of the total amount provided for by the January permits, 54.3 per cent was for new residential building, 31.0 per cent for new nonresidential building, and 14.7 per cent for repairs and alterations.

Table 2 shows the estimated cost of new residential buildings, new nonresidential buildings, total building operations (including alterations and repairs), and the number of families provided for in each of the 283 cities from which reports were received for both December, 1929, and January, 1930, and for 8 other cities for January, 1930, only.

Totals and percentages of increase or decrease in expenditures for each class of building and in families provided for are shown by geographic divisions.

Reports were received for both December and January from 46 cities in New England, 63 cities in the Middle Atlantic States, 71 cities in the East North Central States, 23 cities in the West North Central States, 31 cities in the South Atlantic States, 22 cities in the South Central States, and 27 cities in the Mountain and Pacific States.

Reports were also received from 2 cities in the New England States, 1 in the East North Central States, 1 in the South Atlantic States, and 4 in the South Central States for January only.

#### New England States

INDICATED expenditures for all classes of building operations in the New England States decreased 36.4 per cent, comparing January, 1930, with December, 1929. The decrease for nonresidential buildings was much greater than for residential buildings. The decrease for the former class of buildings was 53.9 per cent, and the latter 15.4 per cent; however, the number of families provided for increased 2.7 per cent, comparing January permits with December permits.

Increases in total expenditures were shown in Bangor, Brookline, Cambridge, and Springfield. Large decreases were noted in Providence and Pittsfield. As compared with December, there was a large increase in the number of families provided for in Boston in January, 1930.

No report was received from New London, Conn.

#### Middle Atlantic States

IN THE Middle Atlantic division there was a decrease in total building operations in new residential buildings, in new nonresidential buildings, and in families provided for, comparing the permits issued during January, 1930, with those issued during December, 1929. The decrease in this division was greater for residential than for nonresidential buildings. Indicated expenditures for residential buildings decreased 19.5 per cent, for nonresidential buildings the decrease was 11.7 per cent, and for all building operations, 14.8 per cent.

Families provided for decreased 3.4 per cent, comparing January permits with December permits.

Increases in total building operations were registered in Newark, Orange, Buffalo, and the boroughs of Manhattan and Queens. Decreases were registered in Camden, Irvington, the boroughs of the Bronx, Brooklyn, and Richmond, and in Philadelphia, and Pittsburgh.

No reports were received from Newburgh, N. Y., Harrisburg, Lebanon, and Reading, Pa.

#### East North Central States

IN THE East North Central division there was an increase of 1.3 per cent in new residential building, but a decrease of 37.1 per cent in new nonresidential building and of 24.4 per cent in the estimated cost of all building operations, comparing January with December. The number of families provided for decreased 19.2 per cent.

Increases in expenditures for total building operations were indicated in Chicago, Detroit, Cleveland, and Cincinnati. Decreases were indicated in Indianapolis, Grand Rapids, Akron, and Milwaukee.

No reports were received from Anderson and South Bend, Ind.; Battle Creek, Mich.; Canton and Zanesville, Ohio; and La Crosse and Racine, Wis.

#### West North Central States

THE West North Central division showed decreased in all classes of building operations and in families provided for, comparing the permits issued in January with those issued in December.

The decreases in new residential buildings, comparing the January permits with the December permits, was 23.4 per cent. The decrease in new nonresidential buildings was 48.4 per cent. The decrease in total building operations was 38.5 per cent. The decrease in families provided for was 18.9 per cent.

In the cities having a population of 25,000 or over less building was projected in this division than in any of the other geographic divisions.

Sizable increases were shown in Dubuque, Sioux City, Minneapolis, and Lincoln. Large decreases were shown in Davenport, St. Paul, St. Louis, and Omaha.

No report was received from Kansas City, Mo.

#### South Atlantic States

THE South Atlantic division was the only section in which the building permits issued during January showed an increase over December in indicated expenditures for each class of building and for families provided for.

The increase in this division for all building operations was 29.9 per cent, for new residential buildings was 35.4 per cent, and for nonresidential buildings the increase was 50.3 per cent.

The increase in families provided for was 163.5 per cent. This big increase was largely accounted for by two apartment houses in Washington, D. C., which will provide for 220 families upon completion.

Increases in indicated expenditures were shown in Washington, Jacksonville, Tampa, Norfolk, Richmond, and Huntington. Decreases in indicated expenditures were shown in Baltimore, Miami, and Charleston.

No reports were received from Pensacola, Fla.; Atlanta and Augusta, Ga.; and Wilmington, N. C.

#### South Central States

IN THE South Central division the January permits issued for residential buildings registered an increase in expenditures over the December permits for residential building of 2.1 per cent. An increase of eight-tenths of 1 per cent was shown in families provided for.

Permits issued for nonresidential buildings showed a decrease of 54.5 per cent, while those issued for all building operations during January showed a decrease of 40.8 per cent as compared with those issued during December.

Increases were shown in Shreveport, Nashville, Beaumont, and Waco, while decreases were indicated in Mobile, Little Rock, Lexington, New Orleans, Oklahoma City, and Austin.

No reports were received from Birmingham, Ala.; Fort Smith, Ark.; Covington, Ky.; El Paso, Galveston, Laredo, and Port Arthur, Tex.

#### Mountain and Pacific States

IN THE Mountain and Pacific division there was an increase in indicated expenditures for all building operations of 65.2 per cent in January, 1930, as compared with December, 1929. There was an increase in the estimated costs of the permits issued for both residential and nonresidential buildings in comparing January with December. The increase in the former class was 19.9 per cent and in the latter 174.4 per cent. The large increase in nonresidential buildings was caused by the large expenditures in Los Angeles. Over \$6,000,000 more nonresidential building was projected in January than in December in Los Angeles.

Increases in total building operations were indicated in Los Angeles, Berkeley, Denver, Portland, and Seattle. Decreases were shown in Phoenix, Long Beach, San Francisco, Salt Lake City, and Tacoma.

No report was received from Oakland, Calif.

TABLE 2.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, DECEMBER, 1929, AND JANUARY, 1930

#### New England States

City and State	New residential buildings				New nonresidential buildings		Total construction (including alterations and repairs)	
	Estimated cost		Families provided for in new dwellings		Estimated cost		Estimated cost	
	December, 1929	January, 1930	Decem-ber, 1929	Jan-uary, 1930	December, 1929	January, 1930	December, 1929	January, 1930
Connecticut:								
Bridgeport	\$164,500	\$75,900	18	18	\$85,580	\$36,645	\$261,695	\$138,005
Greenwich	280,800	149,000	8	11	21,205	16,925	344,705	203,475
Hartford	60,600	25,300	10	4	219,600	160,400	407,916	404,081
Meriden	19,750	34,850	5	7	72,385	7,125	95,635	49,405
New Britain	5,000			1		11,280		22,413
New Haven	55,000	15,000	9	3	1,902,085	136,900	1,981,385	186,394
Norwalk	35,500	74,000	5	9	237,300	74,200	282,450	156,335
Stamford	55,000	31,800	3	6	14,850	29,800	98,425	71,720
Waterbury	20,500	14,000	5	3	20,100	3,450	41,600	29,550

TABLE 2.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, DECEMBER, 1929, AND JANUARY, 1930—Continued

## New England States—Continued

City and State	New residential buildings				New nonresidential buildings		Total construction (including altera- tions and repairs)	
	Estimated cost		Families pro- vided for in new dwellings		Estimated cost		Estimated cost	
	December, 1929	January, 1930	De- cem- ber, 1929	Jan- uary, 1930	December, 1929	January, 1930	December, 1929	January, 1930
Maine:								
Bangor.....	0	0	0	0	\$75	0	\$75	0
Lewiston.....	\$13,000	\$3,500	4	1	20,000	\$165,000	33,000	\$168,500
Portland.....	34,600	16,500	7	4	9,275	750	59,806	83,985
Massachusetts:								
Boston <sup>1</sup> .....	445,500	573,000	55	124	1,630,980	1,776,905	2,776,216	2,836,853
Brockton.....	14,200	44,900	3	5	2,550	14,100	33,365	63,495
Brookline.....	40,000	0	1	0	6,100	354,480	49,850	373,524
Cambridge.....	37,500	8,000	7	3	51,885	238,405	116,860	357,625
Chelsea.....	0	17,000	0	4	600	5,500	5,725	35,525
Chicopee.....	0	8,000	0	2	1,450	1,400	1,450	13,500
Everett.....	19,000	8,000	5	2	1,100	2,100	28,100	21,100
Fall River.....	14,300	9,800	3	3	23,110	655	53,129	19,140
Fitchburg.....	14,000	4,000	3	1	8,380	0	26,480	5,025
Haverhill.....	3,000	0	1	0	475	0	7,825	2,125
Holyoke.....	0	7,000	0	1	750	1,100	9,650	13,550
Lawrence.....	0	0	0	0	4,450	200	17,550	5,375
Lowell.....	11,300	6,500	3	2	12,755	10,800	28,780	36,165
Lynn.....	14,300	42,000	3	8	4,720	2,770	28,313	84,500
Malden.....	80,000	27,100	24	6	300	9,700	88,410	39,330
Medford.....	80,500	62,500	14	12	11,900	400	98,100	78,200
New Bedford.....	0	13,200	0	3	17,800	7,250	28,000	33,475
Newton.....	235,000	269,700	22	27	8,810	9,200	252,595	329,520
Pittsfield.....	59,600	18,500	11	4	1,110,400	9,950	1,181,100	43,200
Quincy.....	112,100	51,500	33	13	258,055	7,860	382,588	78,150
Revere.....	7,000	8,300	2	2	1,725	53,350	18,825	78,925
Salem.....	15,500	8,000	3	2	9,250	10,800	33,645	37,015
Somerville.....	6,500	7,000	2	2	122,550	29,175	137,650	41,290
Springfield.....	58,450	70,700	15	18	26,775	55,800	100,435	220,800
Taunton.....	5,500	3,000	2	1	2,550	250	9,600	11,165
Waltham.....	41,000	17,000	12	3	4,650	13,315	48,400	70,315
Watertown.....	13,000	17,300	3	3	8,350	8,650	28,550	31,725
Worcester.....	75,500	40,800	14	10	15,085	14,030	143,390	136,045
New Hampshire:								
Manchester.....	26,500	14,000	5	2	4,350	7,400	115,140	55,970
Rhode Island:								
Central Falls.....	13,000	12,000	4	3	0	2,000	13,050	15,750
Cranston.....	115,100	123,200	21	26	10,365	9,850	126,115	143,325
East Providence.....	44,000	27,000	7	6	114,400	9,800	164,010	40,455
Newport.....	35,900	.....	3	.....	.....	6,000	.....	52,125
Pawtucket.....	56,800	56,050	13	15	7,820	16,395	94,420	79,195
Providence.....	217,300	196,300	38	35	1,268,600	75,750	1,580,300	349,650
Woonsocket.....	0	0	0	0	6,025	1,425	11,725	3,225
Total.....	2,614,700	2,211,200	403	414	7,361,520	3,391,960	11,446,033	7,276,277
Per cent of change.....		-15.4	.....	+2.7	.....	-53.9	.....	-36.4

## Middle Atlantic States

New Jersey:								
Atlantic City.....	\$8,000	\$10,600	1	3	\$250	\$64,150	\$109,504	\$145,875
Bayonne.....	0	0	0	0	55,000	33,000	72,000	42,300
Bloomfield.....	345,000	119,000	74	30	24,000	25,500	370,000	144,500
Camden.....	108,000	66,500	27	22	107,075	58,600	233,913	174,338
Clifton.....	95,000	53,850	20	11	22,550	35,200	121,610	97,475
East Orange.....	867,000	27,500	131	6	58,400	19,475	948,235	71,760
Elizabeth.....	51,000	46,000	7	11	61,000	60,000	112,000	115,000
Hoboken.....	0	0	0	0	8,500	0	23,315	19,465
Irvington.....	52,500	32,000	11	8	612,193	8,285	667,603	46,685
Jersey City.....	34,000	20,000	8	3	57,745	253,365	141,213	324,815
Kearny.....	0	23,000	0	3	1,645	2,995	3,145	28,335
Montclair.....	28,500	86,800	2	6	2,600	32,075	39,150	175,330
Newark.....	209,500	81,600	43	17	430,115	714,924	730,339	974,252

<sup>1</sup> Applications filed.

TABLE 2.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, DECEMBER, 1929, AND JANUARY, 1930—Continued

*Middle Atlantic States—Continued*

City and State	New residential buildings				New nonresidential buildings		Total construction (including alterations and repairs)	
	Estimated cost		Families provided for in new dwellings		Estimated cost		Estimated cost	
	December, 1929	January, 1930	De- cem- ber, 1929	Jan- uary, 1930	December, 1929	January, 1930	December, 1929	January, 1930
<b>New Jersey—Contd.</b>								
New Brunswick	\$207,000	\$9,600	66	2	\$32,700	\$7,850	\$241,750	\$17,450
Orange	0	275,000	0	48	10,000	8,815	43,940	295,121
Passaic	5,500	61,000	2	9	44,000	4,400	77,493	113,795
Paterson	116,500	23,300	32	6	73,890	14,614	229,513	66,356
Perth Amboy	7,800	38,000	2	9	19,450	2,850	32,225	59,950
Plainfield	9,000	41,105	1	4	1,300	33,000	33,733	90,605
Trenton	4,000	0	1	0	3,015	52,750	28,950	61,633
Union City	0	0	0	0	0	10,950	3,770	16,310
West New York	0	0	0	0	900	800	3,010	17,615
<b>New York:</b>								
Albany	129,500	73,500	11	8	4,050	300	190,390	168,720
Amsterdam	7,000	0	1	0	21,000	1,500	28,000	1,500
Auburn	13,300	23,100	2	2	81,993	9,825	104,538	39,405
Binghamton	19,000	19,600	6	5	38,400	25,570	98,105	68,806
Buffalo	341,500	262,050	97	88	823,341	1,123,380	1,201,516	1,509,790
Elmira	4,800	0	1	0	262,945	6,150	296,430	16,890
Jamestown	12,600	12,400	4	3	5,550	1,950	32,195	24,655
Kingston	18,000	10,000	4	2	4,650	975	198,710	40,975
Mount Vernon	106,000	219,500	8	62	157,570	3,500	310,670	278,214
New Rochelle	245,000	428,300	11	24	165,089	900	418,089	448,420
<b>New York City:</b>								
Bronx <sup>1</sup>	939,600	850,000	184	215	2,423,262	946,650	3,597,062	2,191,735
Brooklyn <sup>1</sup>	1,940,000	1,032,500	367	247	1,011,415	1,146,960	3,744,520	2,924,095
Manhattan <sup>1</sup>	2,425,000	2,575,000	191	401	7,826,300	11,523,400	12,024,783	17,036,970
Queens <sup>1</sup>	2,218,775	1,695,350	442	340	1,050,856	5,022,833	3,699,384	6,998,914
Richmond <sup>1</sup>	218,425	234,460	31	31	157,640	23,435	413,717	301,875
Niagara Falls	0	45,400	0	11	145,300	2,315	167,028	76,325
Poughkeepsie	24,000	0	2	0	41,500	7,317	123,000	80,217
Rochester	90,800	83,500	19	12	286,325	70,665	423,605	212,220
Schenectady	61,000	23,000	10	4	80,100	315,800	265,200	377,150
Syracuse	242,000	106,500	28	26	776,850	74,770	1,133,800	214,420
Troy	29,000	0	4	0	59,200	19,200	101,950	28,935
Utica	63,000	8,000	10	2	157,850	17,150	254,050	76,450
Watertown	0	0	0	0	425,900	15,400	427,153	15,825
White Plains	67,500	73,000	6	5	165,100	6,000	235,900	90,700
Yonkers	771,000	144,000	16	27	549,010	9,270	1,341,535	346,970
<b>Pennsylvania:</b>								
Allentown	13,000	49,300	2	4	8,650	224,150	34,800	302,050
Altoona	0	42,900	0	5	2,795	19,395	12,451	72,954
Bethlehem	7,000	45,000	2	7	500	500	22,175	49,950
Butler	0	6,600	0	3	400	8,450	1,150	35,637
Chester	0	0	0	0	326,650	-----	-----	333,050
Easton	0	0	0	0	403,650	479	412,850	7,779
Erie	94,950	23,000	28	5	215,775	18,950	375,425	68,325
Hazleton	0	0	0	0	0	49,000	0	49,480
Johnstown	0	12,000	0	3	2,300	12,950	4,750	36,245
Lancaster	0	0	0	0	381,450	19,205	385,300	26,280
McKeesport	23,800	16,500	5	8	1,648	2,650	32,776	25,525
New Castle	12,400	0	2	0	1,605	7,650	18,480	10,250
Norristown	0	22,900	0	3	2,485	13,650	3,445	58,590
Philadelphia	284,000	1,163,200	24	207	4,004,210	1,066,635	5,740,405	2,679,195
Pittsburgh	653,500	343,450	130	58	3,038,730	81,445	5,631,826	683,640
Scranton	13,950	0	4	0	3,600	2,230	48,700	33,105
Wilkes-Barre	14,000	4,000	3	1	10,230	900	25,298	13,379
Wilkinsburg	35,000	35,000	11	6	4,185	0	108,772	38,600
Williamsport	11,000	13,000	3	4	2,178	1,715	15,943	21,443
York	7,000	0	2	0	7,000	300	22,037	17,223
Total	13,304,700	10,710,865	2,099	2,027	26,438,915	23,358,067	47,994,324	40,898,791
Per cent of change	-----	-19.5	-----	-3.4	-----	-11.7	-----	-14.8

<sup>1</sup> Applications filed.

## HOUSING

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TABLE 2.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, DECEMBER, 1929, AND JANUARY, 1930—Continued

## East North Central States

City and State	New residential buildings				New nonresidential buildings		Total construction (including alterations and repairs)	
	Estimated cost		Families provided for in new dwellings		Estimated cost		Estimated cost	
	December, 1929	January, 1930	December, 1929	January, 1930	December, 1929	January, 1930	December, 1929	January, 1930
<b>Illinois:</b>								
Alton	\$13,675	\$7,000	4	2	\$10,300	\$650	\$27,075	\$28,075
Aurora	9,400	29,850	2	6	1,586	1,400	18,939	33,285
Belleville	14,500	0	4	0	2,385	78,465	17,785	78,465
Bloomington	63,000	15,000	11	3	0	3,000	64,000	18,000
Chicago	3,169,300	1,699,700	731	302	1,987,900	3,742,000	5,509,825	5,781,025
Cicero	62,000	18,000	9	5	104,695	3,400	191,695	22,150
Danville	15,000	3,000	5	1	0	4,000	18,500	8,500
Decatur	0	36,800	0	5	560	7,800	3,760	46,300
East St. Louis	27,200	8,500	9	3	370,050	12,700	401,185	28,800
Elgin	20,700	15,200	4	4	26,650	6,450	61,539	30,936
Evanston	110,000	67,000	2	5	251,500	10,500	400,500	88,000
Joliet	34,000	83,000	4	7	60,000	5,000	130,900	113,100
Moline	187,000	14,000	30	5	5,950	800	198,791	17,365
Oak Park	168,500	8,000	3	1	38,000	50,300	213,400	65,175
Peoria	52,300	15,000	7	3	125,550	49,300	237,400	75,650
Quincy	0	0	0	0	0	2,500	54,200	2,500
Rockford	83,500	64,500	19	17	25,800	6,200	132,200	115,210
Rock Island	24,500	6,500	7	4	550	295	63,613	15,990
Springfield	12,500	22,500	3	6	9,635	86,425	27,412	150,625
<b>Indiana:</b>								
East Chicago	12,500	0	3	0	662,407	0	674,907	900
Elkhart	12,300	0	3	0	1,900	41,725	29,789	43,519
Evansville	23,700	12,000	7	4	15,300	78,031	45,650	120,251
Fort Wayne	79,900	149,300	17	38	1,195,938	159,175	1,322,913	349,069
Gary	24,000	7,500	7	1	5,850	4,200	33,750	16,600
Hammond	46,500	29,500	16	10	1,008,900	2,500	1,058,100	36,500
Indianapolis	150,995	136,840	42	39	339,875	218,140	540,883	448,450
Kokomo	6,050	0	2	0	5,010	300	17,005	4,520
Marion	0	2,000	0	1	6,150	3,500	6,375	6,900
Muncie	33,295	6,920	10	2	8,682	86,893	169,264	98,168
Richmond	30,000	8,800	8	3	30,325	1,000	77,505	10,000
Terre Haute	3,400	5,000	2	2	900	9,375	15,270	16,346
<b>Michigan:</b>								
Bay City	5,500	8,000	2	3	800	403	13,150	17,953
Detroit	1,032,133	2,328,600	235	208	1,040,327	956,929	2,398,630	3,993,889
Flint	119,580	71,512	30	21	22,156	13,116	238,676	187,338
Grand Rapids	61,800	84,100	18	22	31,760	67,715	116,625	165,760
Hamtramck	5,500	0	2	0	3,200	200	14,000	1,800
Highland Park	165,000	0	42	0	10,300	66,075	179,800	78,200
Jackson	18,900	16,700	3	4	11,065	22,163	131,530	59,243
Kalamazoo	34,000	30,300	6	9	22,970	11,800	69,361	47,126
Lansing	40,768	20,500	11	5	144,270	235,409	202,703	285,634
Muskegon	19,900	8,650	5	3	632,850	5,925	656,842	18,503
Pontiac	38,650	8,400	14	4	424,930	154,650	467,030	171,825
Port Huron	0	53,000	0	21	0	0	1,100	53,000
Saginaw	26,700	10,500	9	4	167,635	965,720	214,950	977,305
<b>Ohio:</b>								
Akron	108,300	157,850	24	35	2,355,466	27,850	2,492,814	259,580
Ashtabula	0	6,000	0	2	28,360	5,950	32,282	15,560
Cincinnati	247,850	393,085	34	93	1,167,260	1,827,945	1,464,480	2,313,555
Cleveland	311,000	1,039,500	56	243	113,850	1,787,350	931,600	3,031,200
Columbus	87,800	75,000	15	16	95,700	26,200	211,800	128,200
Dayton	34,000	20,500	11	6	202,334	221,167	262,938	307,947
East Cleveland	0	210,000	0	17	100	0	1,300	212,700
Hamilton	44,600	23,850	5	4	850	33,025	72,325	67,758
Lakewood	24,500	102,000	6	39	9,540	23,490	37,340	131,290
Lima	7,000	0	1	0	4,500	240,350	31,200	242,800
Lorain	17,400	11,800	6	3	1,805	1,700	19,205	13,800
Mansfield	0	5,000	0	1	25,950	14,425	52,900	29,375
Marion	0	0	0	0	5,838	0	5,838	2,600
Newark	20,100	14,700	6	7	1,170	3,275	22,170	18,725
Portsmouth	5,500	3,000	2	1	2,200	2,050	9,325	7,375
Springfield	10,000	52,500	4	4	350	2,400	20,400	56,075
Steubenville	5,500	16,700	1	6	0	0	8,650	48,250
Toledo	47,200	64,350	15	16	70,510	269,880	207,493	402,960
Warren	31,500	15,800	10	5	9,450	3,725	42,925	40,800
Youngstown	74,000	20,800	15	6	61,922	29,865	163,747	56,440

TABLE 2.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, DECEMBER, 1929, AND JANUARY, 1930—Continued

## East North Central States—Continued

City and State	New residential buildings				New nonresidential buildings		Total construction (including altera- tions and repairs)	
	Estimated cost		Families pro- vided for in new dwellings		Estimated cost		Estimated cost	
	December, 1929	January, 1930	De- cem- ber, 1929	Jan- uary, 1930	December, 1929	January, 1930	December, 1929	January, 1930
<b>Wisconsin:</b>								
Fond du Lac	0	\$30,000	0	1	0	\$170	\$730	\$35,370
Green Bay	0	4,000	0	1	\$360	151,795	23,400	177,115
Kenosha	\$63,500	27,000	3	4	8,845	32,375	80,670	81,315
Madison		6,000		1		575		24,023
Milwaukee	352,600	196,000	93	45	6,877,243	552,744	7,331,160	928,899
Oshkosh	2,000	9,621	1	2	650	1,775	4,250	38,656
Sheboygan	0	5,500	0	1	1,214	4,720	9,169	37,055
Superior	16,000	0	4	0	8,850	95	25,550	3,145
Total	7,568,496	7,665,728	1,660	1,341	19,871,428	12,492,150	29,982,488	22,669,395
Per cent of change		+1.3		-19.2		-37.1		-24.4

## West North Central States

<b>Iowa:</b>								
Burlington	\$15,000	0	5	0	\$1,725	\$2,150	\$17,605	\$2,250
Cedar Rapids	12,300	\$2,800	3	1	8,904	625	26,664	61,945
Council Bluffs	0	8,500	0	2	13,000	2,700	14,000	23,300
Davenport	53,000	17,000	11	3	111,950	68,475	175,683	92,575
Des Moines	33,850	43,300	7	8	14,560	13,222	82,610	79,172
Dubuque	2,950	5,000	1	1	1,750	291,627	9,753	296,627
Ottumwa	3,500	5,000	1	1	37,215	0	40,715	5,000
Sioux City	30,500	27,800	7	7	16,325	231,750	47,975	260,250
Waterloo	13,600	40,800	6	10	4,325	1,550	17,925	48,400
<b>Kansas:</b>								
Hutchinson	48,950	23,585	13	10	32,000	1,025	80,950	34,600
Kansas City	32,950	18,300	16	7	2,650	8,600	41,425	28,410
Topeka	3,100	3,000	2	1	89,090	20,575	104,825	23,575
Wichita	162,500	82,700	43	19	73,855	72,305	250,633	166,885
<b>Minnesota:</b>								
Duluth	18,500	12,000	4	2	950	1,775	47,850	33,414
Minneapolis	187,925	228,300	52	69	27,510	137,825	349,640	562,770
St. Paul	99,840	103,680	15	32	210,060	10,752	372,069	149,340
<b>Missouri:</b>								
Joplin	5,400	6,000	3	3	54,100	100	62,200	15,076
Springfield	30,600	0	14	0	11,350	24,550	126,900	38,750
St. Joseph	3,800	6,200	2	3	0	0	8,862	20,625
St. Louis	151,700	94,800	33	25	836,795	45,849	1,351,053	261,315
<b>Nebraska:</b>								
Lincoln	18,000	14,950	5	4	27,520	131,525	45,520	156,175
Omaha	64,600	11,100	20	4	405,900	11,410	482,750	34,210
<b>South Dakota:</b>								
Sioux Falls	3,500	8,750	1	2	108,500	375	152,750	9,125
Total	996,065	763,565	264	214	2,090,124	1,078,765	3,910,357	2,403,799
Per cent of change		-23.4		-18.9		-48.4		-38.

## South Atlantic States

<b>Delaware:</b>								
Wilmington	\$60,500	\$92,000	11	22	\$12,050	\$25,880	\$165,885	\$164,595
<b>District of Columbia:</b>								
Washington	1,494,400	2,446,800	26	281	685,900	1,870,790	2,706,973	4,514,420
<b>Florida:</b>								
Jacksonville	46,025	70,950	14	25	51,128	156,710	139,273	257,125
Miami	60,650	53,200	11	13	111,145	55,380	247,162	191,603
St. Petersburg	14,300	34,000	3	9	27,000	16,100	54,700	68,200
Tampa	4,700	14,880	4	12	23,005	351,885	58,644	403,563

TABLE 2.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, DECEMBER, 1929, AND JANUARY, 1930—Continued

*South Atlantic States—Continued*

City and State	New residential buildings			New nonresidential buildings		Total construction (including altera- tions and repairs)		
	Estimated cost		Families pro- vided for in new dwellings	Estimated cost		Estimated cost		
	December, 1929	January, 1930	De- cem- ber, 1929	Jan- uary, 1930	December, 1929	January, 1930	December, 1929	January, 1930
Georgia:								
Columbus	\$2,600	\$31,950	6	10	\$330	\$11,490	\$20,195	\$59,455
Macon	10,000	1,600	2	3	13,000	12,050	50,440	17,310
Savannah	23,500	71,300	5	20	3,350	5,350	27,995	86,235
Maryland:								
Baltimore	766,000	706,800	66	138	1,490,200	980,800	2,734,400	2,164,000
Cumberland	8,000	4,850	1	2	2,637	977	12,137	7,327
Hagerstown	74,000	9,000	5	2	6,750	9,525	82,250	18,965
North Carolina:								
Asheville	91,400	0	1	0	1,245	8,500	100,790	66,050
Charlotte	77,450	70,750	19	22	2,375	20,950	93,992	125,010
Durham	44,150	35,313	22	16	219,500	45,000	266,200	85,513
Greensboro	4,000	20,000	1	5	965	9,000	15,987	36,130
Winston-Salem	14,200	9,750	6	3	6,765	1,930	43,504	23,350
South Carolina:								
Charleston	2,400	5,500	2	3	0	1,575	6,900	13,640
Columbia	10,500	65,400	5	24	107,825	18,450	121,525	99,700
Greenville	0	22,000	0	5	31,080	30,895	57,685	62,120
Spartanburg		10,050		7		1,300		14,335
Virginia:								
Lynchburg	2,600	20,000	3	4	160,540	5,650	172,500	58,557
Newport News	6,500	13,300	2	5	2,048	41,006	34,152	64,518
Norfolk	35,900	70,200	8	12	34,175	144,262	82,455	245,692
Petersburg	1,250	1,200	1	1	50	200	1,450	2,325
Portsmouth	3,650	10,400	2	10	200	31,785	16,633	49,014
Richmond	200,790	135,600	22	37	112,995	894,808	415,229	1,069,383
Roanoke	48,990	16,398	5	5	15,080	45,729	65,530	123,350
West Virginia:								
Charleston	34,300	47,100	15	16	112,203	8,470	150,895	57,820
Clarksburg	2,500	3,500	1	1	290	1,150	15,540	6,050
Huntington	0	174,000	0	6	3,000	37,600	5,560	211,600
Wheeling	8,500	13,000	2	2	1,590	25,000	64,951	69,957
Total	3,153,755	4,270,741	271	714	3,238,421	4,868,897	8,021,532	10,422,577
Per cent of change		+35.4		+163.5		+50.3		+20.9

*South Central States*

Alabama:								
Mobile	\$35,450	\$18,500	10	10	\$21,000	\$7,350	\$71,518	\$45,829
Montgomery	12,500	34,350	12	28	9,845	8,465	44,436	67,175
Arkansas:								
Little Rock	99,580	76,300	29	13	325,235	20,305	456,799	160,664
Kentucky:								
Lexington	5,500	8,800	4	7	46,765	8,115	83,425	24,690
Louisville		147,250		25		48,175		230,825
Newport	5,000	3,800	1	1	0	100	9,150	8,540
Paducah	1,250	12,350	1	5	0	19,000	1,250	31,360
Louisiana:								
Baton Rouge		1,250		1		942		36,344
New Orleans	61,675	68,555	15	20	519,701	168,942	620,740	314,139
Shreveport	29,140	89,755	16	17	16,849	106,036	73,103	235,105
Oklahoma:								
Muskogee	0	0	0	0	9,250	10,350	9,635	17,750
Oklahoma City	436,500	261,750	127	87	329,435	724,025	1,817,160	1,119,475
Omulgee	0	0	0	0	0	5,000	0	7,700
Tulsa	249,680	253,150	66	38	176,055	51,750	471,170	326,462
Tennessee:								
Chattanooga		119,900		20		95,830		302,291
Knoxville	25,680	24,960	5	4	56,700	47,454	89,180	88,640
Memphis	179,660	214,630	58	59	163,116	49,920	583,658	350,247
Nashville	41,150	42,750	21	18	26,200	112,300	122,772	239,772

TABLE 2.—ESTIMATED COST OF BUILDINGS FOR WHICH PERMITS WERE ISSUED IN PRINCIPAL CITIES, DECEMBER, 1929, AND JANUARY, 1930—Continued

*South Central States—Continued*

City and State	New residential buildings				New nonresidential buildings		Total construction (including alterations and repairs)	
	Estimated cost		Families provided for in new dwellings		Estimated cost		Estimated cost.	
	December, 1929	January, 1930	De-cem-ber, 1929	Jan-uary, 1930	December, 1929	January, 1930	December, 1929	January, 1930
<b>Texas:</b>								
Austin.....	\$47,675	\$99,254	23	56	\$924,960	\$95,385	\$979,534	\$208,216
Beaumont.....	34,445	60,550	16	23	31,355	60,667	79,518	445,126
Dallas.....	100,150	145,350	36	62	229,410	290,935	513,419	530,229
Fort Worth.....	207,600	171,966	33	42	63,768	262,617	326,218	471,114
Houston.....		839,660		200		217,390		1,078,288
San Antonio.....	193,985	179,475	112	98	2,758,865	506,668	3,110,285	732,015
Waco.....	47,707	20,267	11	8	28,200	50,533	84,247	149,384
Wichita Falls.....	200	66,690	1	6	0	5,000	8,105	92,381
Total.....	1,814,527	1,853,202	597	602	5,736,709	2,610,917	9,555,322	5,656,000
Per cent of change.....		+2.1		+0.8		-54.5		-40.8

*Mountain and Pacific States*

<b>Arizona:</b>								
Phoenix.....	\$76,880	\$105,530	37	48	\$287,650	\$45,253	\$484,200	\$166,633
Tucson.....	35,550	71,150	13	14	200,275	46,805	242,560	126,729
<b>California:</b>								
Alameda.....	12,000	17,500	3	4	22,914	1,775	47,289	26,670
Berkeley.....	137,500	348,350	49	11	14,365	58,515	168,818	434,054
Fresno.....	37,950	26,750	11	8	9,079	97,915	113,574	171,142
Long Beach.....	563,700	309,350	203	104	501,975	355,830	1,093,880	708,990
Los Angeles.....	2,269,400	2,073,830	744	596	600,173	6,176,893	3,992,459	9,115,846
Pasadena.....	158,350	101,925	20	11	38,330	79,316	281,330	237,008
Sacramento.....	71,900	324,700	18	42	13,900	38,570	115,219	410,542
San Diego.....	208,545	222,950	47	55	527,910	80,934	768,575	360,190
San Francisco.....	424,900	794,450	84	189	724,035	418,307	1,591,736	1,405,856
San Jose.....	47,950	69,000	15	16	14,910	104,800	77,730	207,525
Stockton.....	25,200	31,300	6	7	13,895	16,315	52,877	65,032
Vallejo.....	9,000	0	2	0	15,375	31,145	26,636	35,532
<b>Colorado:</b>								
Colorado Springs.....	12,100	0	4	0	14,475	100,830	30,910	104,735
Denver.....	326,200	85,000	92	7	165,100	420,050	589,450	605,460
Pueblo.....	4,000	2,000	1	1	13,165	7,950	28,749	38,920
<b>Montana:</b>								
Butte.....	0	0	0	0	7,366	4,200	7,566	4,200
Great Falls.....	5,075	12,500	4	3	91,932	4,215	133,507	17,065
<b>Oregon:</b>								
Portland.....	243,550	98,800	69	19	114,020	368,880	508,400	666,570
<b>Utah:</b>								
Ogden.....	2,000	0	1	0	3,000	31,000	7,000	32,500
Salt Lake City.....	113,700	41,300	27	9	124,145	52,349	376,738	110,549
<b>Washington:</b>								
Bellingham.....	15,600	7,650	7	3	3,275	1,375	24,645	13,725
Everett.....	7,500	13,500	3	7	37,460	37,430	54,355	203,695
Seattle.....	507,700	1,799,425	157	164	714,615	3,333,455	1,373,175	5,248,975
Spokane.....	21,700	56,300	7	15	80,486	3,161	123,981	80,731
Tacoma.....	186,000	9,000	67	5	28,240	105,955	238,615	139,125
Total.....	5,523,950	6,622,260	1,691	1,338	4,382,055	12,023,223	12,553,974	20,737,989
Per cent of change.....		+19.9		-20.9		+174.4		+65.2

## WAGES AND HOURS OF LABOR

### Hours and Earnings of Employees of Oil Wells and Pipe Lines, 1929

THE Bureau of Labor Statistics made a study of wages and hours of labor of wage earners in the petroleum industry in the spring and summer of 1929.<sup>1</sup> It was limited to employees of representative plants engaged in the drilling and operation of oil wells and the construction and operation of pipe lines. No information was obtained for refineries. The data were copied by agents of the bureau directly from the pay rolls or records of the various companies and cover 30,655 wage earners employed by oil-well companies and 12,322 employed by pipe-line companies located in California, Louisiana, Oklahoma, and Texas. These four States produced in 1928 slightly more than 84.4 per cent of the entire production of petroleum in the United States. All of the employees covered are male workers. The report does not include officials, office forces, foremen, or watchmen. A large proportion of the pay-roll data covers a half-month period, including from 13 to 16 working-days, depending on the particular month or part of month selected. In order to present these figures on a more uniform plan and on the same basis as that shown for other industries, data were also obtained for days and hours worked in one week of the half-month pay period scheduled. This made it possible to present all figures on a 1-week basis.

Table 1 shows for each of the four States covered the average number of days worked per week in 1929, the average full-time and actual hours and earnings per week, the average earnings per hour, and the per cent of full-time worked in each of the divisions of the industry studied.

As the table shows, the average full-time hours of oil-well employees ranged from 48 to 69.9, while those of pipe-line employees ranged from 48 to 60.4. In no State, however, were the full-time hours actually worked, the proportion of full-time work ranging from 88 to 99.4 per cent in oil wells and from 86.6 to 98.5 per cent in pipe lines.

The average earnings per hour of oil-well employees ranged from 52.2 cents in northern Louisiana to 91.7 cents in California; their average full-time earnings per week from \$34.62 in Oklahoma to \$44.02 in California; and their actual earnings in one week from \$32.81 in northern Louisiana to \$43.71 in California. For employees of pipe lines, average hourly earnings ranged from 57.7 cents in the Gulf district of Texas to 80.3 cents in California; their average full-time earnings from \$31.85 in the Gulf district of Texas to \$38.54 in California; and their actual earnings in one week from \$28.57 in the Gulf district of Texas to \$37.95 in California.

<sup>1</sup> A study of wages and hours of labor in the petroleum industry was made by the Bureau of Labor Statistics in the latter part of 1920. At that time, data were obtained from a representative number of companies in every State in which petroleum was produced to any considerable extent. Wage data for refinery workers as well as the production and pipe-line employees were included in this former report which was published as Bul. No. 297.

TABLE 1.—AVERAGE NUMBER OF DAYS ON WHICH EMPLOYEES WORKED, AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS PER WEEK, AVERAGE EARNINGS PER HOUR, AND PER CENT OF FULL TIME WORKED, 1928, BY DISTRICT

District	Number of establish- ments	Num- ber of em- ployees	Average number of days worked in 1 week	Average full-time hours per week	Average hours actually worked in 1 week	Per cent of full- time hours actually worked	Average earnings per hour	Average full-time earnings per week	Average actual earnings in 1 week
<i>Wells</i>									
California	5	8,158	5.9	48.0	47.7	99.4	\$0.917	\$44.02	\$43.71
Louisiana, northern	19	2,101	6.2	69.9	62.8	89.8	.522	36.49	32.81
Louisiana, southern	8	559	6.0	66.7	58.7	88.0	.572	38.15	33.60
Oklahoma	28	10,159	6.2	62.6	59.7	95.4	.553	34.62	33.03
Texas, Gulf	10	2,909	5.9	62.5	56.6	90.6	.585	36.56	33.07
Texas, other	28	6,769	6.3	67.4	66.8	99.1	.535	36.06	35.73
<i>Pipe lines</i>									
California	3	1,578	5.9	48.0	47.3	98.5	.803	38.54	37.95
Louisiana <sup>1</sup>	9	594	5.6	55.5	48.5	87.4	.612	33.97	29.71
Oklahoma	10	4,166	5.8	56.3	52.9	94.0	.590	33.22	31.22
Texas, Gulf	3	2,575	5.5	55.2	49.5	89.7	.577	31.85	28.57
Texas, other	15	3,409	5.7	60.4	52.3	86.6	.591	35.70	30.94

<sup>1</sup> Northern and southern Louisiana districts combined to avoid disclosing the identity of establishments.

Table 2 presents similar information by districts for selected occupations and for a miscellaneous group of "other employees."

TABLE 2.—AVERAGE NUMBER OF DAYS ON WHICH EMPLOYEES WORKED, AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS PER WEEK, AVERAGE EARNINGS PER HOUR, AND PER CENT OF FULL TIME WORKED, 1929, BY OCCUPATION AND DISTRICT

*Oil wells*

Occupation and district	Number of establish- ments	Num- ber of wage earners	Average num- ber of days worked in 1 week	Average full-time hours per week	Average hours actually worked in 1 week	Per cent of full- time hours worked in 1 week	Average earnings per hour	Average full-time earnings per week	Average actual earnings in 1 week
<i>Carpenters:</i>									
California	5	66	5.9	48.0	47.0	97.9	\$0.983	\$47.18	\$46.23
Louisiana, northern	5	13	5.8	68.9	57.5	83.5	.545	37.55	31.35
Louisiana, southern	3	4	6.5	59.3	57.0	96.1	.621	36.83	35.42
Oklahoma	14	130	5.9	56.8	52.2	91.9	.700	39.76	36.58
Texas, Gulf	4	40	4.9	56.2	44.4	79.0	.746	41.93	33.08
Texas, other	16	128	5.8	63.9	55.8	87.3	.691	44.15	38.58
<i>Derrick men:</i>									
California	5	583	6.0	48.0	47.6	99.2	.991	47.57	47.20
Louisiana, northern	18	171	5.9	70.5	59.2	84.0	.511	36.03	30.26
Louisiana, southern	8	72	5.7	65.9	54.5	82.7	.562	37.04	30.66
Oklahoma	3	22	6.6	84.0	79.1	94.2	.602	50.57	47.63
Texas, Gulf	9	359	5.6	60.4	52.0	86.1	.582	35.15	30.23
Texas, other	11	69	5.2	76.2	61.1	80.2	.505	38.48	30.84
<i>Drillers:</i>									
California	5	667	6.0	48.0	47.8	99.6	1.369	65.71	65.49
Louisiana, northern	16	94	6.6	75.6	71.6	94.7	.819	61.92	58.65
Louisiana, southern	8	65	6.1	68.2	60.9	89.3	.954	65.06	58.07
Oklahoma	19	217	6.2	74.5	65.5	87.9	1.080	80.46	70.71
Texas, Gulf	9	241	6.0	61.1	56.9	93.1	.969	59.21	55.15
Texas, other	28	415	6.0	80.3	69.8	86.9	.881	70.74	61.46
<i>Drillers' helpers and clean-outs' helpers:</i>									
California	5	1,892	5.9	48.0	47.5	99.0	.888	42.62	42.16
Louisiana, northern	16	180	5.9	76.5	64.9	84.8	.438	33.51	28.45
Louisiana, southern	8	169	5.7	66.9	57.1	85.4	.496	33.18	28.34
Oklahoma	14	318	6.5	66.5	63.7	95.8	.616	40.96	39.27
Texas, Gulf	8	618	5.6	59.2	51.7	87.3	.533	31.55	27.52
Texas, other	21	269	5.5	77.4	63.1	81.5	.501	38.78	31.57

TABLE 2.—AVERAGE NUMBER OF DAYS ON WHICH EMPLOYEES WORKED, AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS PER WEEK, AVERAGE EARNINGS PER HOUR, AND PER CENT OF FULL TIME WORKED, 1929, BY OCCUPATION AND DISTRICT—Continued

## Oil wells—Continued

Occupation and district	Number of establishments	Number of wage earners	Average number of days worked in 1 week	Average full-time hours per week	Average hours actually worked in 1 week	Per cent of full-time hours worked in 1 week	Average earnings per hour	Average full-time earnings per week	Average actual earnings in 1 week
Engineers and pumpers:									
California	5	852	6.0	48.0	48.0	100.0	\$0.812	\$38.97	\$38.97
Louisiana,northern	19	525	6.5	71.3	67.6	94.8	.494	35.22	33.43
Louisiana,southern	7	31	6.4	72.2	67.9	94.0	.516	37.26	35.03
Oklahoma	26	2,419	6.7	73.8	73.4	99.5	.454	33.51	33.33
Texas, Gulf	9	373	6.2	76.2	70.6	92.7	.479	36.50	33.77
Texas, other	23	1,784	6.7	81.5	79.3	97.3	.435	35.45	34.46
Firemen:									
California	5	265	5.9	48.0	47.3	98.5	.769	36.91	36.40
Louisiana,northern	14	102	6.2	79.8	71.5	89.6	.468	37.35	33.46
Louisiana,southern	8	56	6.0	70.3	62.4	88.8	.521	36.63	32.47
Oklahoma	10	70	6.5	78.0	74.7	95.8	.486	37.91	36.29
Texas, Gulf	8	160	5.9	69.8	62.6	89.7	.512	35.74	32.03
Texas, other	17	173	6.2	82.1	72.8	88.7	.479	39.32	34.87
Gaugers:									
California	5	56	6.0	48.0	48.1	100.2	.854	40.99	41.11
Louisiana,northern	5	18	6.5	60.2	59.8	99.3	.660	39.73	39.44
Louisiana,southern	3	4	6.5	81.0	78.0	96.3	.510	41.30	39.76
Oklahoma	5	16	6.6	62.1	62.1	100.0	.548	34.03	34.03
Texas, Gulf	4	35	6.2	71.1	71.5	100.6	.568	40.38	40.60
Texas, other	10	58	6.0	74.4	65.8	88.4	.506	37.65	33.30
Laborers, roustabouts, and connection men:									
California	5	1,209	5.9	48.0	47.0	97.9	.734	35.23	34.52
Louisiana,northern	17	545	5.8	67.3	56.2	83.5	.472	31.77	26.54
Louisiana,southern	7	82	6.1	63.6	57.2	89.9	.488	31.04	27.92
Oklahoma	25	3,919	5.8	56.5	51.5	91.2	.522	29.49	26.89
Texas, Gulf	10	639	5.6	58.8	52.1	88.6	.519	30.52	27.03
Texas, other	23	2,174	6.1	65.0	58.7	90.3	.491	31.92	28.85
Machinists:									
California	4	235	5.9	48.0	47.4	98.8	1,025	49.20	48.57
Louisiana,northern	3	20	6.3	59.3	56.3	94.9	.850	50.41	47.86
Louisiana,southern	2	5	5.8	51.0	49.6	97.3	.704	35.90	34.91
Oklahoma	8	66	6.2	52.9	56.6	107.0	.802	42.43	45.40
Texas, Gulf	3	11	6.5	61.7	58.0	94.0	.690	42.57	39.99
Texas, other	14	100	6.4	57.3	60.8	106.1	.811	46.47	49.37
Mechanics, not otherwise specified:									
California	5	530	5.9	48.0	47.7	99.4	.976	46.85	46.54
Louisiana,northern	8	59	6.5	58.8	60.4	102.7	.709	41.69	42.85
Louisiana,southern	3	6	7.0	60.5	61.8	102.1	.750	45.38	46.37
Oklahoma	18	531	6.1	55.2	53.8	97.5	.689	38.03	37.07
Texas, Gulf	5	52	6.4	59.0	54.9	93.1	.711	41.95	39.02
Texas, other	14	237	6.3	61.4	60.2	98.0	.727	44.64	43.75
Mechanics' helpers:									
California	5	127	5.9	48.0	47.6	99.2	.787	37.78	37.43
Louisiana,northern	5	34	6.4	59.5	61.7	103.7	.521	31.00	32.13
Louisiana,southern	3	11	6.2	56.1	53.7	95.7	.522	29.28	28.05
Oklahoma	12	174	6.2	55.4	55.3	99.8	.555	30.75	30.73
Texas, Gulf	4	46	5.8	56.7	53.4	94.2	.554	31.41	29.61
Texas, other	14	126	5.8	60.2	55.3	91.9	.554	33.35	30.66
Rig builders:									
California	4	129	5.9	48.0	47.6	99.2	1,293	62.06	61.53
Louisiana,northern	4	19	5.7	63.9	52.4	82.0	.822	52.53	43.10
Oklahoma	4	68	5.8	55.1	51.8	94.0	.884	48.71	45.83
Texas, Gulf	2	18	5.7	56.5	49.9	88.3	1,046	59.10	52.19
Teamsters:									
Louisiana,northern	9	28	6.9	70.0	69.5	99.3	.351	24.57	24.37
Oklahoma	7	16	5.6	60.9	54.2	89.0	.531	32.34	28.78
Texas, Gulf	2	7	6.1	55.3	55.3	100.0	.511	28.26	28.26
Texas, other	8	12	6.9	66.3	68.1	102.7	.464	30.76	31.58
Tool dressers:									
California	4	130	6.0	48.0	48.2	100.4	1,015	48.72	48.94
Louisiana,northern	5	21	5.1	70.3	51.6	73.4	.549	38.59	38.34
Louisiana,southern	3	4	6.5	59.0	59.0	100.0	.757	44.66	44.66
Oklahoma	17	154	6.0	77.4	66.5	85.9	.872	67.49	58.01
Texas, Gulf	3	12	6.9	72.2	72.2	100.0	.808	58.34	58.34
Texas, other	19	229	6.0	81.4	70.8	87.0	.713	58.04	50.50

TABLE 2.—AVERAGE NUMBER OF DAYS ON WHICH EMPLOYEES WORKED, AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS PER WEEK, AVERAGE EARNINGS PER HOUR, AND PER CENT OF FULL TIME WORKED, 1929, BY OCCUPATION AND DISTRICT—Continued

*Oil wells—Continued*

Occupation and district	Number of establishments	Number of wage earners	Average number of days worked in 1 week	Average full-time hours per week	Average hours actually worked in 1 week	Per cent of full-time hours worked in 1 week	Average earnings per hour	Average full-time earnings per week	Average actual earnings in 1 week
Truck drivers:									
California	5	352	6.1	48.0	49.3	102.7	\$0.857	\$41.14	\$42.25
Louisiana, northern	13	66	6.3	67.9	62.8	92.5	.467	31.71	29.31
Louisiana, southern	4	11	6.2	68.7	61.0	88.8	.473	32.50	28.83
Oklahoma	23	472	6.3	57.9	57.9	100.0	.574	33.23	33.23
Texas, Gulf	7	49	6.4	64.8	63.8	98.5	.532	34.47	33.93
Texas, other	22	420	6.6	65.3	64.6	98.9	.531	34.67	34.32
Other employees:									
California	5	1,065	6.0	48.0	47.9	99.8	.895	42.96	42.89
Louisiana, northern	17	206	6.5	67.2	64.0	95.2	.605	40.66	38.69
Louisiana, southern	5	39	6.3	67.1	60.1	89.6	.536	35.97	32.25
Oklahoma	26	1,567	6.3	61.6	60.0	97.4	.602	37.08	36.13
Texas, Gulf	8	249	6.4	61.2	60.8	99.3	.659	40.33	40.06
Texas, other	23	575	6.6	67.7	65.8	97.2	.610	41.30	40.16

*Pipe lines*

Carpenters:									
California	3	13	6.0	48.0	48.0	100.0	\$1.017	\$48.83	\$48.83
Oklahoma	5	53	6.1	54.5	55.9	102.6	.790	43.06	44.15
Texas, Gulf	3	24	5.3	57.4	47.2	82.2	.776	44.54	36.63
Texas, other	8	47	5.3	58.7	48.6	82.8	.769	45.14	37.40
Engineers and pump- ers:									
California	3	253	6.0	48.0	47.9	99.8	.871	41.81	41.74
Louisiana <sup>1</sup>	9	117	6.3	57.4	55.2	96.2	.673	38.63	37.18
Oklahoma	10	478	6.7	58.3	58.1	99.7	.694	40.46	40.37
Texas, Gulf	3	278	6.2	55.5	51.6	93.0	.666	36.96	34.34
Texas, other	13	603	6.4	57.1	54.4	95.3	.681	38.89	37.10
Firemen:									
California	3	163	6.0	48.0	48.0	100.0	.799	38.38	38.38
Louisiana <sup>1</sup>	5	36	6.0	53.6	51.1	95.3	.630	33.77	32.19
Oklahoma	2	13	6.4	51.1	51.1	100.0	.711	36.33	36.33
Texas, Gulf	3	43	6.8	55.4	54.7	98.7	.605	33.52	33.09
Texas, other	4	14	6.6	55.3	53.6	96.9	.629	34.78	33.71
Gaugers:									
California	2	117	6.1	48.0	48.5	101.0	.900	43.20	43.70
Louisiana <sup>1</sup>	9	56	6.5	59.5	56.8	95.5	.726	43.20	41.28
Oklahoma	10	340	6.8	64.1	63.2	98.6	.698	44.74	44.10
Texas, Gulf	3	171	6.3	53.9	51.8	96.1	.694	37.41	35.93
Texas, other	15	382	6.4	61.5	58.2	94.6	.661	40.65	38.49
Laborers, roustabouts, and connection men:									
California	3	517	5.7	48.0	45.9	95.6	.704	33.79	32.29
Louisiana <sup>1</sup>	9	156	4.5	55.1	38.8	70.4	.437	24.08	16.98
Oklahoma	10	2,112	5.3	55.4	49.3	89.0	.456	25.26	22.46
Texas, Gulf	3	1,351	5.0	55.5	46.8	84.3	.479	26.58	22.42
Texas, other	16	1,415	5.0	61.9	48.2	77.9	.493	30.52	23.76
Linemen:									
California	2	13	5.8	48.0	47.3	98.5	.853	40.94	40.34
Louisiana <sup>1</sup>	4	11	5.5	56.8	48.1	84.7	.622	35.33	29.94
Oklahoma	7	59	6.0	56.3	55.7	98.9	.706	39.75	39.37
Texas, Gulf	2	21	5.1	56.1	46.4	82.7	.706	39.61	32.73
Texas, other	8	23	6.6	61.8	61.2	99.0	.622	38.44	38.03
Line walkers:									
California	3	46	6.0	48.0	48.3	100.6	.745	35.76	36.02
Louisiana <sup>1</sup>	8	40	6.1	57.4	52.8	92.0	.604	34.67	31.92
Oklahoma	10	188	6.3	56.5	56.4	99.8	.613	34.63	34.60
Texas, Gulf	3	114	6.5	56.4	54.9	97.3	.632	35.64	34.72
Texas, other	14	246	6.0	69.8	59.9	85.8	.565	39.44	33.84
Machinists:									
California	2	37	6.0	48.0	48.0	100.0	.956	45.88	45.88
Oklahoma	3	43	6.0	54.6	54.4	99.6	.833	45.48	45.31
Texas, Gulf	3	15	6.8	61.2	61.2	100.0	.791	48.44	48.44
Texas, other	7	19	6.6	60.4	60.4	100.0	.756	45.66	45.66

<sup>1</sup> Northern and southern Louisiana districts combined to avoid disclosing the identity of establishments.

TABLE 2.—AVERAGE NUMBER OF DAYS ON WHICH EMPLOYEES WORKED, AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS PER WEEK, AVERAGE EARNINGS PER HOUR, AND PER CENT OF FULL TIME WORKED, 1929, BY OCCUPATION AND DISTRICT—Continued

Occupation and district	Number of establish-ments	Num-ber of wage earners	Average number of days worked in 1 week	Average full time hours per week	Average hours actually worked in 1 week	Per cent of full time hours worked in 1 week	Average earnings per hour	Average full time earnings per week	Average actual earnings of 1 week
<b>Mechanics, not otherwise specified:</b>									
California	3	106	6.0	48.0	47.8	99.6	\$0.933	\$44.78	\$44.57
Louisiana <sup>1</sup>	3	37	5.2	50.0	42.4	84.8	.792	39.60	33.60
Oklahoma	6	293	6.0	54.5	54.1	99.3	.829	45.18	44.84
Texas, Gulf	3	170	5.9	55.5	54.3	97.8	.808	44.84	43.88
Texas, other	12	119	5.7	58.0	53.6	92.4	.752	43.62	40.28
<b>Mechanics' helpers:</b>									
California	3	75	6.0	48.0	48.1	100.2	.772	37.06	37.15
Louisiana <sup>1</sup>	2	4	6.0	53.5	51.5	96.3	.583	31.19	30.01
Oklahoma	4	100	5.8	54.4	52.7	96.9	.555	30.19	29.26
Texas, Gulf	2	20	5.5	56.3	51.4	91.3	.549	30.91	28.18
Texas, other	8	29	6.1	62.5	59.4	95.0	.529	33.06	31.41
<b>Oilers:</b>									
Louisiana <sup>1</sup>	5	49	6.3	54.8	53.1	96.9	.571	31.29	30.36
Oklahoma	3	46	6.2	54.2	50.0	92.3	.666	36.10	33.31
Texas, Gulf	3	114	5.8	50.2	46.6	92.8	.668	33.53	31.15
Texas, other	6	144	5.7	52.6	46.3	88.0	.641	33.72	29.63
<b>Teamsters:</b>									
Louisiana <sup>1</sup>	2	4	3.5	53.5	31.5	58.9	.528	28.25	16.63
<b>Telegraph operators:</b>									
Louisiana <sup>1</sup>	3	58	5.9	50.1	47.0	93.8	.668	33.47	31.41
Oklahoma	2	67	6.1	48.4	48.8	100.8	.720	34.85	35.17
Texas, Gulf	3	64	6.1	50.1	48.6	97.0	.690	34.57	33.56
Texas, other	7	176	6.3	52.6	50.5	96.0	.666	35.03	33.66
<b>Truck drivers:</b>									
California	3	35	5.9	48.0	47.8	99.6	.811	38.93	38.73
Louisiana <sup>1</sup>	5	15	5.5	64.9	53.1	81.8	.503	32.64	26.70
Oklahoma	8	152	5.8	55.8	53.4	95.7	.632	35.27	33.72
Texas, Gulf	3	65	5.9	57.3	54.6	95.3	.560	32.09	30.60
Texas, other	13	96	6.3	59.6	58.5	98.2	.566	33.73	33.10
<b>Other employees:</b>									
California	3	203	5.9	48.0	47.5	99.0	.817	39.22	38.85
Louisiana <sup>1</sup>	6	11	6.4	58.7	56.3	95.9	.700	41.09	39.38
Oklahoma	9	222	6.2	55.8	56.0	100.4	.778	43.41	43.54
Texas, Gulf	3	125	6.1	55.8	57.8	103.6	.581	32.42	33.55
Texas, other	14	96	6.0	61.9	57.4	92.7	.622	38.50	35.71

<sup>1</sup> Northern and southern Louisiana districts combined to avoid disclosing the identity of establishments.

### Earnings of Employees

#### Average and Classified Earnings per Hour

AVERAGE and classified earnings per hour are presented in Table 3 by occupation and district for employees in 12 representative occupations in the industry.

The figures in the table cover 22,349 employees in 7 occupations of the oil-well division and 9,249 employees in 5 occupations of the pipe-line division, representing 72.9 per cent of the total covered for oil wells and 75.1 per cent of those for pipe lines.

TABLE 3.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, 1929, BY OCCUPATION AND DISTRICT  
*Oil wells*

Occupation and district	Number of establish- ments	Number of wage earners	Average earnings per hour	Number of wage earners whose earnings per hour were—												
				Under 30 cents	30 and under 35 cents	35 and under 40 cents	40 and under 45 cents	45 and under 50 cents	50 and under 55 cents	60 and under 65 cents	65 and under 70 cents	70 and under 75 cents	80 and under 85 cents	90 cents and under \$1.00	\$1.00 and under \$1.25	\$1.25 and under \$1.50
Derrickmen:																
California	5	583	\$0.991													
Louisiana, northern	18	171	.511													
Louisiana, southern	8	72	.562													
Oklahoma	3	22	.602													
Texas, Gulf	9	359	.582													
Texas, other	11	69	.505													
Drillers:																
California	5	667	1.369													
Louisiana, northern	16	94	.819													
Louisiana, southern	8	65	.964													
Oklahoma	19	217	1.080													
Texas, Gulf	9	241	.969													
Texas, other	28	415	.881													
Drillers' helpers and clean-outs' helpers:																
California	5	1,892	.888													
Louisiana, northern	16	180	.438													
Louisiana, southern	8	169	.496													
Oklahoma	14	318	.616													
Texas, Gulf	8	618	.533													
Texas, other	21	269	.501													
Engineers and pumpers:																
California	5	852	.812													
Louisiana, northern	19	525	.494													
Louisiana, southern	7	31	.516													
Oklahoma	26	2,419	.454	1	2	1.74	1.580	1.768	1.432	1.177	1.107	1.215	1.4			
Texas, Gulf	9	373	.479	5	6	1.4	1.148	1.148	1.271	1.192	1.18	1.4	1			
Texas, other	23	1,784	.435													
Firemen:																
California	5	265	.769													
Louisiana, northern	14	102	.468													
Louisiana, southern	8	56	.521													
Oklahoma	10	70	.486													
Texas, Gulf	8	160	.512													
Texas, other	17	173	.479		1	2	1.46	1.46	1.47	1.71	1.4	5		2		
Labors, roustabouts and connection men:																
California	5	1,209	.734	16	20	3	12	1	1.295	1.160	1.79	27	1			
Louisiana, northern	17	545	.472													

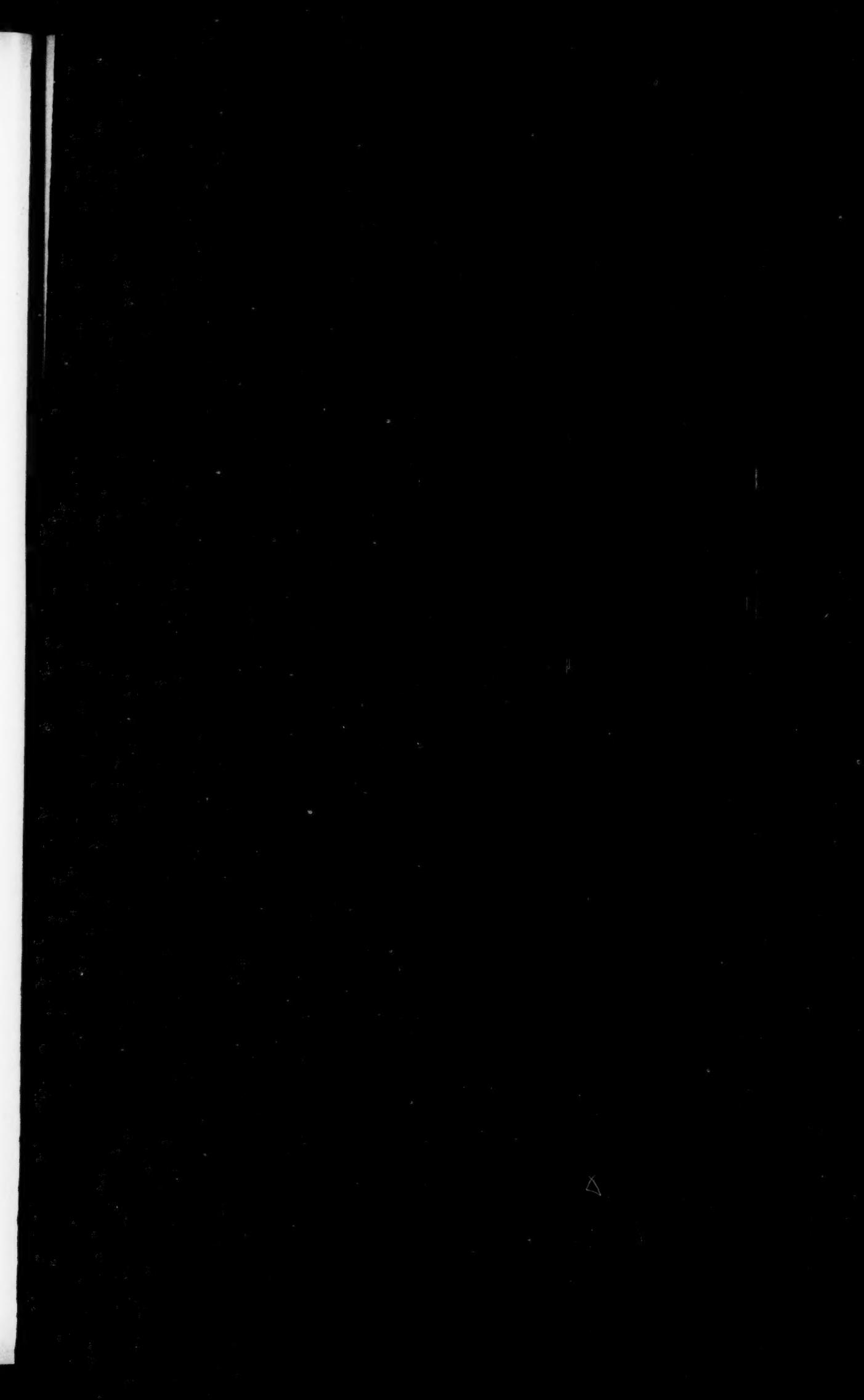


TABLE 3.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, 1929, BY OCCUPATION AND DISTRICT  
*Oil wells*

Occupation and district	Number of establish-ments	Number of wage earners	Average earnings per hour	Number of wage earners whose earnings per hour were—									
				Under 30 cents	30 and under 35 cents	35 and under 40 cents	40 and under 45 cents	45 and under 50 cents	50 and under 60 cents	60 and under 70 cents	70 and under 80 cents	80 and under 90 cents	90 cents and under \$1.00
Derrickmen:													
California	5	683	\$0.901										
Louisiana, northern	18	171	.611										
Louisiana, southern	8	72	.562										
Oklahoma	3	22	.602										
Texas, Gulf	9	359	.582										
Texas, other	11	69	.505										
Drillers:													
California	5	907	1.369										
Louisiana, northern	16	94	.819										
Louisiana, southern	8	65	.954										
Oklahoma	19	217	1.080										
Texas, Gulf	9	241	.969										
Texas, other	28	415	.881										
Drillers' helpers and clean-outs' helpers:													
California	5	1,802	.888										
Louisiana, northern	16	180	.438										
Louisiana, southern	8	169	.496										
Oklahoma	14	318	.616										
Texas, Gulf	8	618	.533										
Texas, other	21	260	.501										
Engineers and pumpers:													
California	5	852	.812										
Louisiana, northern	19	525	.494										
Louisiana, southern	7	31	.516										
Oklahoma	26	2,419	.454	1.2	1.74	1.550	1.788	1.432	1.177	1.167	1.215	1.4	
Texas, Gulf	9	373	.479	5	4	34	226	81	12	1			
Texas, other	23	1,784	.436	6	6	1,148	1,148	1,271	1,192	1,8	4	1	
Firemen:													
California	5	265	.769										
Louisiana, northern	14	102	.468										
Louisiana, southern	8	66	.621										
Oklahoma	10	70	.486										
Texas, Gulf	8	160	.512										
Texas, other	17	173	.479										
Labors, roustabouts and connection men:													
California	5	734	1.209										
Louisiana, northern	17	472	.545										

Louisiana, southern	7	.82	488	5	1.2	15	13	40	3	1.13	1.4	1.1
Oklahoma	25	3,919	.522	12	4	682	1,1,143	1,1,289	1,777	—	—	—
Texas, Gulf	10	639	.519	35	6	3	65	542	7	3	1	1
Texas, other	23	2,174	.491	35	7	86	1,790	1,1,108	1,130	3	—	—
Tool dressers:												
California	4	130	1,015									
Louisiana, northern	5	21	.549									
Louisiana, southern	3	4	.757									
Oklahoma	17	154	.872									
Texas, Gulf	3	12	.808									
Texas, other	19	228	.713									

## Pipe lines

Engineers and pumpers:												
California	3	263	\$0.871									
Louisiana <sup>1</sup>	9	117	.673									
Oklahoma	10	478	.694									
Texas, Gulf	3	278	.666									
Texas, other	13	603	.681									
Firers:												
California	3	163	.790									
Louisiana <sup>2</sup>	5	36	.630									
Oklahoma	2	13	.711									
Texas, Gulf	3	43	.605									
Texas, other	4	14	.629									
Gaugers:												
California	2	117	.900									
Louisiana <sup>2</sup>	9	56	.726									
Oklahoma	10	340	.698									
Texas, Gulf	3	171	.694									
Texas, other	15	382	.661									
Laborers, rustabouts, and connection men:												
California	3	517	.704									
Louisiana <sup>2</sup>	9	156	.437									
Oklahoma	10	2,112	.456									
Texas, Gulf	3	1,351	.479									
Texas, other	16	1,416	.493									
Line walkers:												
California	3	46	.745									
Louisiana <sup>1</sup>	8	40	.604									
Oklahoma	10	188	.613									
Texas, Gulf	3	114	.632									
Texas, other	14	246	.565									
Grand total			9,249									

<sup>1</sup> Includes estimated value of company houses occupied by all or part of the employees in this group with no rental charge. See text, p. 120.<sup>2</sup> Northern and southern Louisiana districts combined to avoid disclosing the identity of establishments.

**Actual Earnings in One Week**

Average and classified actual earnings in one representative week are presented in Table 4. These figures are shown for employees in 7 selected occupations in the oil well and 5 occupations in the pipe-line division of the industry.

Average actual earnings of drillers in one week range from \$55.15 in the Gulf district of Texas to \$70.71 in Oklahoma.

The data show that of a total of 667 drillers in California, 160 (or 24 per cent) actually earned between \$60 and \$65 during the one-week pay period scheduled, 378 (or 56.7 per cent) earned between \$65 and \$70, and 96 (or 14.4 per cent) earned between \$70 and \$75; thus, 634 (or 95.1 per cent) of the 667 earned between \$60 and \$75. Eleven drillers earned over \$80 during the week covered. On the other hand, of the 22 who earned less than \$60 per week, 3 earned less than \$20, 1 each between \$35 and \$40 and between \$40 and \$45; 2 from \$45 to \$50; 9 from \$50 to \$55; and 6 from \$55 to \$60. The low earnings shown may have been due to sickness, to injury, to entering or leaving the service during the pay period, or to other causes. The extremely high weekly earnings are usually accounted for by overtime work. The average earnings for the entire group of California drillers above noted were \$65.49 per week.

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TABLE 4.—AVERAGE AND CLASSIFIED ACTUAL EARNINGS IN ONE WEEK, 1929, BY OCCUPATION AND DISTRICTS

## Oil wells

Occupation and district	Number of establishments	Average actual earnings in 1 week	Number of wage earners	Number of wage earners whose actual earnings in 1 week were—														
				\$5 and under \$5	\$10 and under \$15	\$15 and under \$20	\$20 and under \$25	\$25 and under \$30	\$30 and under \$35	\$35 and under \$40	\$40 and under \$45	\$45 and under \$50	\$50 and under \$55	\$55 and under \$60	\$60 and under \$65	\$65 and under \$70	\$70 and under \$75	\$75 and under \$80
Derrickmen:																		
California	5	\$47.20	1	1	1	1	1	1	2	2	7	104	417	44	3			
Louisiana, northern	18	30.26	1	11	8	6	7	12	2	35	86	5	104	417	44	3		
Louisiana, southern	8	30.66	3	3	4	6	3	2	21	27	6	104	417	44	3			
Oklahoma	3	47.65	2	1	1	1	1	1	2	2	2	1	1	1	1			
Texas, Gulf	3	30.23	3	16	22	18	22	24	86	150	15	3	1	1	1			
Texas, other	11	30.94	5	5	8	1	5	1	4	25	120							
Drillers:																		
California	5	60.7	65.49	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Louisiana, northern	16	94	58.65	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Louisiana, southern	8	65	58.07	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Oklahoma	19	21.7	70.71	2	6	1	1	1	1	1	1	1	1	1	1	1	1	1
Texas, Gulf	9	24.1	55.15	5	5	2	4	4	4	4	4	4	4	4	4	4	4	4
Texas, other	28	41.5	61.46	4	10	2	17	11	15	13	117	7	1.54	31	45	30	33	3
Drillers' helpers and clean-outs' helpers:																		
California	5	1,892	42.16	6	1	5	7	12	38	571	844	324	83	1				
Louisiana, northern	16	180	28.45	3	8	8	12	13	5	93	34	4						
Louisiana, southern	8	169	28.34	2	8	10	9	12	23	66	31	8						
Oklahoma	14	318	39.27	2	2	6	3	4	12	1.59	1.34	1.47	41	2	6			2
Texas, Gulf	8	618	27.62	21	25	34	27	50	63	338	52	8						
Texas, other	21	260	31.57	1	24	20	13	12	8	45	1.43	1.97	3	1	2			
Engineers and pumpers:																		
California	5	862	38.97	1	1	1	1	1	1	5	6	657	174	7	1			
Louisiana, northern	19	525	33.43	6	6	9	8	11	18	1.178	1.252	1.28	1.8					
Louisiana, southern	7	31	35.03	1	1	1	1	1	1	10	10	11	8					
Oklahoma	26	2,419	33.33	3	13	4	1.6	1.10	1.123	11,580	1,669	1.20						
Texas, Gulf	9	373	33.77	2	8	13	9	12	14	113	172	24	6					
Texas, other	23	1,734	34.46	6	13	19	14	1.23	41	1.325	1.206	1.37	6	1	1	1	1	1
Firemen:																		
California	5	265	36.40	2	4	5	5	3	72	172	12	1						
Louisiana, northern	14	102	33.46	3	3	5	2	3	10	60	13							
Louisiana, southern	8	56	32.47	1	2	2	3	1	19	22	6							
Oklahoma	10	70	36.29	1	1	2	1	1	1	1.41	1	5	5	13				
Texas, Gulf	8	160	32.03	7	5	9	10	52	69	3	2							
Texas, other	17	173	34.87	7	5	5	8	5	17	1.85	30	1.9						

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<sup>1</sup> Includes estimated value of company houses occupied by all or part of the employees in this group with no rental charge. See text, p. 120.

TABLE 4.—AVERAGE AND CLASSIFIED ACTUAL EARNINGS IN ONE WEEK, 1929, BY OCCUPATION AND DISTRICTS—Continued

### *Oil wells—Continued*

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Pipeline

Includes estimated value of company houses occupied by all or part of the employees in this group with no rental charge. See text, p. 120.

## Allowances or Additions to Wages

**Housing accommodations.**—Oil is often discovered in farming communities or other isolated districts where housing accommodations are very limited. At first the workers generally erect tents or frame shacks at their own expense on the land controlled by the oil companies, but as the new oil fields are developed the companies usually erect houses for their permanent employees. This is true of the pipe-line as well as the producing companies. A nominal rent is usually charged for these company houses, but in some instances the workers occupy them rent free. In the present study an estimated rental value was obtained for all houses occupied rent free by employees, and this sum was added to the earnings of each worker occupant.

Many of the companies maintain bunk houses for their unmarried employees, in some cases charging a small sum for their use, while in others all permanent employees are at liberty to use them free. No satisfactory figures could be obtained as to the value of such free accommodations.

A few employees, such as gaugers and line walkers, who are required to be away from their homes at specified times, are given extra allowances for board. In the tabulation of figures in this study all allowances for board have been included with the wages of the workers who received them.

Some employees were also given allowances for the maintenance of automobiles, but these were not included in the earnings.

Table 5 shows the number of houses occupied rent free by the oil-well and pipe-line employees included in this study. The number of free houses provided by the oil-well companies ranged from 22 in northern Louisiana to 2,946 in Oklahoma, no rent-free houses being supplied by the companies in southern Louisiana and the Gulf district of Texas; those provided by the pipe-line companies ranged from 5 in Louisiana to 110 in Oklahoma. The estimated rental value of these houses ranged from \$2 to \$50 per month, a very large proportion being in the group \$10 to \$12.50 per month. The rental values given were based on the number of rooms, improvements, and location of the house.

TABLE 5.—NUMBER AND ESTIMATED RENTAL VALUE OF HOUSES OCCUPIED RENT FREE BY OIL-WELL AND PIPE-LINE EMPLOYEES, 1929, BY DISTRICTS

District	Total number of houses	Number of houses with estimated rental value per month											
		\$2 and under \$5 under \$5	\$5 and under \$7.50	\$7.50 and under \$10	\$10 and under \$12.50	\$12.50 and under \$15	\$15 and under \$20	\$20 and under \$25	\$25 and under \$30	\$30 and under \$40	\$40 and under \$50	\$50	
<i>Wells</i>													
California	35	—	28	4	2	—	1	—	—	—	—	—	—
Louisiana, northern	22	—	4	—	15	—	1	2	—	—	—	—	5
Oklahoma	2,946	25	194	421	1,044	188	511	388	129	30	11	—	—
Texas, other	275	8	129	61	55	5	—	—	—	17	—	—	—
<i>Pipe lines</i>													
California	18	—	1	10	7	—	—	—	—	—	—	—	—
Louisiana <sup>1</sup>	5	—	1	4	—	—	—	—	—	—	—	—	—
Oklahoma	110	—	1	30	33	7	10	7	5	8	9	—	—
Texas, Gulf	14	—	3	6	2	—	3	—	—	—	—	—	—
Texas, other	9	—	2	2	2	—	3	—	—	—	—	—	—

<sup>1</sup> Northern and southern districts of Louisiana combined to avoid disclosing the identity of establishments.

*Pay for overtime.*—Overtime is time worked in excess of the regular full-time hours per day. It is sometimes paid for at a higher rate than that paid for regular working time. Of the 98 oil-well and 41 pipe-line companies covered in this wage study, only 4 paid an extra rate for overtime. One of these paid time and one-half to all except pumpers, one paid time and one-half to tool dressers and machinists only, and the remaining two paid time and one-half to temporary employees on construction work only.

*Bonus systems.*—A bonus is remuneration paid in addition to regular earnings. Only one pipe-line company and four oil-well companies had bonus systems in operation at the time of the agent's visit.

The bonus plan of the one pipe-line company and of one oil-well company provides for a cash payment at Christmas time amounting to 15 per cent of the earnings for the month of December. This bonus has been paid each year to all except temporary employees. The remaining three bonus plans are all based on length of service. One company pays 5 per cent of annual earnings at the end of each calendar year to a few of its supervisory employees who have been in continuous employment at least one year. Another pays at Christmas \$33.33 to all who have been in the continuous employment of the company for from 3 to 4 years, \$66.66 to those with service of from 4 to 5 years, and \$100 to those with service of 5 years or more. The one remaining company pays at Christmas \$10 to each worker who has been employed 60 days and under 6 months, \$20 to those in the service 6 months and under 1 year, and one-fourth of a month's salary to those with more than 1 year of service.

#### Wage Changes Since January 1, 1927

Only 11 companies reported that a general wage change had taken place since January 1, 1927. Of these, 7 establishments reported that the working-days had been reduced from 7 to 6 per week for permanent employees, but that the wage rates had been so adjusted that the employees would earn approximately the same in 6 days as they formerly earned in 7 days. In 3 establishments pipe-line station engineers, firemen, oilers, and gaugers were given increases of approximately 10 per cent, and in 1 establishment the wages of roustabouts were increased from \$3 and \$3.50 per day to \$4.

#### Hours of Labor

##### Conditions Affecting Working Hours

IN BOTH the drilling and maintenance of oil wells and in the operation of pipe lines it is usually necessary to keep the machinery in continuous operation. In the present study of working conditions in the oil fields many employees were found in each district (except in California) who regularly worked an 8 or 12 hour shift 7 days in the week. In California the employees of all companies visited are working on a 6-day 48-hour week basis. This is made possible by the employment of relief men who substitute for the regular workers in those occupations where continuous operation is necessary, each employee being allowed one day off duty each week. If it becomes necessary for certain employees to continue at work on their regular day off, they

are given a compensating day at some later period. In each of the other districts visited there were some workers in the 7-day occupations who regularly worked only 6 days per week. When the change was made from the 7-day to the 6-day week in California, as well as in other States, a large proportion of the oil companies adjusted wage rates so as to offset the decrease in weekly earnings which would otherwise have followed, due to the fewer working-days per week.

In some localities pumpers are employed who are in charge of groups of shallow low-production wells where constant care is unnecessary. In these cases the pumping is done from one central station by means of long pull rods connected with the engine in this station. The pumping is carried on in only a part of these wells at a time, in some cases for only a few hours each day, but in others for the entire 24 hours. The wells of small volume are pumped during the day, while in those of larger volume the pumping is started along toward evening and continues all night. The engine is operated by natural gas and once started, does not require constant care. The pumper's duties consist of intermittent oversight rather than of actual work, although he has entire charge of the pumping station for 24 hours per day and usually 7 days per week. He usually lives near by, and his ear is so trained that he will even awake at night if something goes wrong with his engine. However, he is usually on actual duty only during the daylight hours. Such hours vary considerably and may be 8, 10, 12, or even 16 per day in cases of emergency, depending on conditions at the wells. These pumpers have no helpers and on account of their regular, though intermittent, care of these pumps they are known nominally as 24-hour workers, but in the present tabulation they have been given credit for 12 hours per day only, the same as for engineers working at large-production wells where two crews are used, each of which is on duty for 12 hours.

In some localities part-time workers were found who had charge of low-production wells the supervision of which required only a portion of their time. Some of these workers are farmers on whose property the wells are located. The regular working hours of these part-time employees varied from 21 to 42 per week, some working only 3 or 4 days per week, while others were on duty a few hours each day for 7 days per week. These part-time workers have been omitted from the figures shown in this study.

#### Regular or Customary Hours of Operation

The full-time hours per day and per week are the regular fixed standard of working hours, exclusive of lunch times, in each day of the week without regard to overtime or short time.

Table 6 shows the average and classified full-time hours per week by district in 12 specified occupations, of which 7 represent oil wells and 5 pipe lines.

The full-time working hours of all employees in all occupations in California in both oil wells and pipe lines are reported as 48 per week. In other districts they range from 48 to 112 per week. Those working regularly 112 hours per week are line walkers. The length of the regular working hours depends largely on the occupation in which employed. The average full-time hours per week of engineers and pumpers range from 48 in California to 81.5 in the "other Texas"

district. In Oklahoma, for which figures are shown for 2,419 engineers and pumpers, 386 are reported as regularly working 48 hours per week, 1 as working 54 hours, 2 as working 56 hours, 2 as working 60 hours, 124 as working 63 hours, 396 as working 70 hours, 200 as working 72 hours, and 1,308 (or more than one-half of the total) as working 84 hours per week—in other words, 12 hours per day (or night) for 7 days per week. Each of the selected occupations has some workers whose full-time hours are 84 per week.

TABLE 6.—AVERAGE AND CLASSIFIED FULL-TIME HOURS PER WEEK, 1929 BY OCCUPATION AND DISTRICT

*Oil wells*

Occupation and district	Number of establish- ments	Number of wage earners	Average full-time hours per week	Number of wage earners whose full-time hours per week were—							
				48	54	56	60	63	70	72	84
Derrick men:											
California	5	583	48.0	583							
Louisiana, northern	18	171	70.5	17		3		25	78		48
Louisiana, southern	8	72	65.9	17		5		3	35		12
Oklahoma	3	22	84.0								22
Texas, Gulf	9	359	60.4	72	83	24		65	91		124
Texas, other	11	69	76.2			17			1	4	47
Drillers:											
California	5	667	48.0	667							
Louisiana, northern	16	94	75.6	4	2	3		2	33		50
Louisiana, southern	8	65	68.2	16		4			24		21
Oklahoma	19	217	74.5			74					143
Texas, Gulf	9	241	61.1	64	50	20			78		29
Texas, other	28	415	80.3		1	12			55	32	315
Drillers' helpers and clean-outs' helpers:											
California	5	1,892	48.0	1,892							
Louisiana, northern	16	180	76.5	9	4	6		7	42		112
Louisiana, southern	8	169	66.9	47		11			64		47
Oklahoma	14	318	66.5	20	30	135		2		11	120
Texas, Gulf	8	618	59.2	210	110	53		15	174	11	45
Texas, other	21	269	77.4		3	37			23	20	186
Engineers and pumpers:											
California	5	852	48.0	852							
Louisiana, northern	19	525	71.3	84		92			68	9	272
Louisiana, southern	7	31	72.2		10				1	6	14
Oklahoma	26	2,419	73.8	386	1	2	2	124	396	200	1,308
Texas, Gulf	9	373	76.2			57				108	208
Texas, other	23	1,784	81.5			7		17	59	262	1,439
Firemen:											
California	5	265	48.0	265							
Louisiana, northern	14	102	79.8	3		3		4	1		91
Louisiana, southern	8	56	70.3	17		3			5		31
Oklahoma	10	70	78.0	6		3			1	9	51
Texas, Gulf	8	160	69.8	33		24				35	68
Texas, other	17	173	82.1						1	13	10
Laborers, roustabouts, and connection men:											
California	5	1,209	48.0	1,209							
Louisiana, northern	17	545	67.3	42	17		2	33	451		
Louisiana, southern	7	82	63.6	1	16	4		33	25		3
Oklahoma	25	3,919	56.5	722	1,636		199	1,313	19		30
Texas, Gulf	10	639	58.8		345			237	56		1
Texas, other	23	2,174	65.0		332		40	729	1,073		
Tool dressers:											
California	4	130	48.0	130							
Louisiana, northern	5	21	70.3	1					18		2
Louisiana, southern	3	4	59.0	2					2		
Oklahoma	17	15.4	77.4	1		35			4	2	118
Texas, Gulf	3	12	72.2		1				30		5
Texas, other	19	229	81.4						15		184

<sup>1</sup> Includes 10 at 77 hours per week.

<sup>2</sup> Includes 8 at 77 hours per week.

<sup>3</sup> Includes 17 at 77 hours per week.

<sup>4</sup> Includes 1 at 91 hours per week.

<sup>5</sup> Includes 7 at 50 hours per week.

TABLE 6.—AVERAGE AND CLASSIFIED FULL-TIME HOURS PER WEEK, 1929 BY OCCUPATION AND DISTRICT—Continued

*Pipe lines*

Occupation and district	Number of establish- ments	Number of wage earners	Average full-time hours per week	Number of wage earners whose full-time hours per week were—							
				48	54	56	60	63	70	72	84
Engineers and pumbers:											
California	8	253	48.0	253							
Louisiana *	9	117	57.4	57		38					22
Oklahoma	10	478	58.3	101		295		8		18	56
Texas, Gulf	3	278	55.5	70		181				27	
Texas, other	13	603	57.1	125		399			2	41	36
Firemen:											
California	3	163	48.0	163							
Louisiana *	5	36	53.6	25		7					4
Oklahoma	2	13	51.1	8		5					
Texas, Gulf	3	43	55.4	3		40					
Texas, other	4	14	55.3	3		10			1		
Gaugers:											
California	2	117	48.0	117							
Louisiana *	9	56	50.5	15		19		7	11		4
Oklahoma	10	340	64.1	34	14	12		227		2	51
Texas, Gulf	3	171	53.9	50	25	84		12			
Texas, other	15	382	61.5	35	93	109		56	24		65
Laborers, roustabouts, and connection men:											
California	3	517	48.0	517							
Louisiana *	9	156	55.1	92	13	1		12	38		
Oklahoma	10	2,112	55.4	2	1,714		296	69	31		
Texas, Gulf	3	1,351	55.5		1,125			226			
Texas, other	16	1,415	61.9		554	8		371	479		3
Line walkers:											
California	3	46	48.0	46							
Louisiana *	8	40	57.4	15		11		5	8		1
Oklahoma	10	188	56.5	43	64		17	56	8		
Texas, Gulf	3	114	56.4		35	63		16			
Texas, other	14	246	60.8		44	63		19	40		780

\* Northern and southern Louisiana districts combined to avoid disclosing the identity of establishments.

? Includes 20 at 112 hours per week.

Table 7 shows the regular full-time working hours per week and per day of all employees in each district for which data were obtained. The full-time hours shown in the table apply to the position occupied by the man and to the man himself, except in certain cases particularly noted. In these cases the job is a 7-day job, but the worker is off one day a week with a relief man working in his place.

The full-time hours per week in the oil-well division ranged from 44 for 1 employee in Oklahoma to 91 hours for 1 employee in Texas. There were, however, included in this study 10,557 employees, or 34.4 per cent, who regularly worked 48 hours per week, while 5,575, or 18.2 per cent, regularly worked 84 hours per week. The working hours per day, Monday to Friday, ranged from 8 to 13; on Saturday, from 4 to 13; and on Sunday from none to 13 hours. In the 4 States included in this study, 16,250, or 53 per cent, of those employed on oil wells and 8,232, or 66.8 per cent, on pipe lines were regularly off duty on Sunday or some other one day during the week.

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TABLE 7.—NUMBER AND PER CENT OF EMPLOYEES WORKING AT CLASSIFIED GROUP OF FULL-TIME HOURS PER WEEK AND PER DAY,  
1929, BY DISTRICT  
*Oil wells*

Full-time hours per week	Number of employees in—					Per cent of employees in—					
	Full-time hours per day		Calif.-			Texas,		Oklah-		Louisiana,	
	Mon-Friday	Satur-day	Sun-day	Louisiana, north- ern	Louisiana, south- ern	Gulf	Texas, Gulf	other	Oklahoma	Texas, Gulf	other
44	8	4	0	1	2				1		
46½	8½	4	0	13	1,118				2		
48	8	0	677			1	1,809	8		2	
48	8½	4½	0	89		89			11		
48 1	1 8	1 8	7,481	99	470	380	1	8,643	1	13	(3)
48	8½	4½	0	16		16			5		
48½	8½	4½	0	7		7			1		
50	9	5	0	133		60	193				
54	9	0	84	2,690		237	3,011		4		
54 1	1 9	1 9	19	19	107	786	385	1,190	3		
56	8	8	8	40	250	220	80	697	5	26	
59½	8½	8½	8½	2	326	2	26	354	2	27	
60	10	10	0	2					7	2	
60 1	1 10	1 10	10	113	81	472	64	64	2	8	
63	9	9	9	991	162	1,196	4,022	4,073	5		
70	10	10	10	991	9	464	1,962	4,073	47	29	
72	12	12	12	38	11	58			14	21	
72 1	1 12	1 12	1 12	7	294	185	367	813	5	16	
77	11	11	11	35					1	3	
84	12	12	12	583	138	2,400	5,775	5,775	28	25	
91	13	13	13	1	1	1	1	1	21	12	
Total.				8,158	2,101	559	10,159	2,909	6,769	30,655	100
									100	100	100

## *Pipe lines*

Full-time hours per week	Number of employees in—					Per cent of employees in—					(3)
	Full-time hours per day		Calif.-			Texas,		Oklah-		Louisiana,	
	Mon-Friday	Satur-day	Sun-day	Louisiana, north- ern	Louisiana, south- ern	Gulf	Texas, Gulf	other	Oklahoma	Louisiana, north- ern	Texas, Gulf
45	8	5	0	1	2	4	1	987	56		
48	8	8	1 8	887		317	1,786				
48 1	9	9	1 9	691	326	290	2,475	44	44	10	(3)
54	1 9	1 9	1 9	14		159	1,354	2,891	22	59	6
54 1	8	8	8	106		417	374	1,901	18		
56	10	10	0	472		765	1,665			9	
60	9	9	9	34		488	563	1,342	11		
63	10	10	10	381	364	16	42	751	9	14	
70	10	10	10	20	27	41	20	88	12	1	
72 1	1 12	1 12	1 12	107	107	166	312	312	7	1	
77	12	12	12	20		20	20	20	100	100	
84	16	16	16	1,578	1,594	4,166	2,575	3,409	12,322	100	100
Total.									100	100	100

<sup>1</sup> One day off each week, with pay.

<sup>2</sup> Northern and southern Louisiana districts combined to avoid disclosing the identity of establishments.

<sup>3</sup> Less than one-half of 1 per cent.

**Actual Hours Worked**

Average and classified hours actually worked by the several employees in one week for 12 occupations are presented by districts in Table 8. The figures are for employees in 7 occupations in oil wells and in 5 occupations in pipe lines.

The average hours per week actually worked by drillers in the 6 districts ranged from 47.8 in California to 71.6 in northern Louisiana.

The figures in this table show that of a total of 667 drillers in California, 643 (or 96.4 per cent) worked exactly 48 hours and 13 (or 1.9 per cent) worked hours which ranged from 54 to 60. The remaining 11 (1.6 per cent) worked hours ranging from 16 or less to 40 in the one week. Of the 94 drillers in the northern Louisiana district 44 (or 46.8 per cent) worked 84 hours, 30 (or 31.9 per cent) worked 70 hours, 1 worked 72, and 1 worked 63 hours; the remainder in groups of 1 to 4, worked hours varying, from 16 or less to 60 during the one-week pay period covered.

Some employees of an occupation may have worked more than their regular full time during the pay period taken, while others may have worked less than full time because of slack work, sickness, injury, entering or leaving the service during the pay period, or for other causes. It was not feasible to ascertain the causes in individual cases.

## WAGES AND HOURS OF LABOR

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TABLE 8.—AVERAGE AND CLASSIFIED HOURS ACTUALLY WORKED IN ONE WEEK, 1929, BY OCCUPATION AND DISTRICT  
Oil wells

Occupation and district	Number of establishments	Number of wage earners	Average actual hours worked per week	Number of wage earners whose hours actually worked in one week were—											
				16 and under 24	Over 24 and under 32	Over 32 and under 36	Over 36 and under 40	Over 40 and under 48	Over 48 and under 54	Over 54 and under 60	Over 60 and under 66	Over 66 and under 72	Over 72 and under 84	Over 84	
Derrick men:															
California	5	583	47.6	2	2	3	3	5	2	3	8	17	41	2	3
Louisiana, northern	18	171	59.2	10	9	1	3	1	1	4	1	14	3	4	8
Louisiana, southern	8	72	54.5	3	4	2	1	1	1	1	1	14	5	2	18
Oklahoma	3	22	79.1											7	17
Texas, Gulf	9	359	52.0	20	6	9	11	1	10	9	47	6	51	3	35
Texas, other	11	69	61.1	8	6	2	1	1	1	5	43	21	2	14	10
Drillers:															
California	5	667	47.8	3	1	2	2	1	1	4	13	1	1	1	44
Louisiana, northern	16	94	71.6	2	1	1	1	1	1	15	1	3	2	2	10
Louisiana, southern	8	65	60.9	1	2	1	1	1	1	14	60	7	2	21	80
Oklahoma	19	217	65.5	8	2	2	11	1	1	14	52	2	1	1	14
Texas, Gulf	9	241	56.9	7	3	1	3	1	4	7	26	32	3	4	14
Texas, other	28	415	69.8	12	1	18	1	2	24	5	14	1	1	1	213
Drillers' helpers and clean-outs' helpers:															
California	5	1,892	47.5	7	12	13	9	1	47	1,796	17	6	6	1	75
Louisiana, northern	16	180	64.9	6	7	2	5	3	1	2	18	1	1	1	32
Louisiana, southern	8	169	57.1	9	2	3	4	3	40	1	1	4	6	1	27
Oklahoma	14	318	63.7	4	7	4	4	2	1	23	113	5	2	7	99
Texas, Gulf	8	618	51.7	36	15	14	16	5	15	23	18	41	52	9	16
Texas, other	21	260	63.1	27	2	22	1	1	7	2	11	2	12	14	2
Engineers and pumpers:															
California	5	852	48.0	1	1	4	4	1	2	280	1	14	1	1	17
Louisiana, northern	19	525	67.6	9	3	7	4	3	1	6	2	92	1	8	63
Louisiana, southern	7	31	67.9	1	1	1	1	1	1	1	1	8	1	1	12
Oklahoma	26	2,419	73.4	4	6	1	6	1	1	387	2	4	11	128	120
Texas, Gulf	9	373	70.6	6	15	15	9	1	1	12	15	54	11	1	178
Texas, other	23	1,784	70.3	17	3	11	1	16	2	15	1	8	18	21	1
Firemen:															
California	5	265	47.3	2	4	2	2	1	7	2	238	10	4	386	1
Louisiana, northern	14	102	71.5	3	1	1	1	1	3	7	1	3	3	1	68
Louisiana, southern	8	56	62.4	1	2	2	2	1	1	14	1	8	3	1	18
Texas, Gulf	8	160	62.6	7	1	1	1	1	1	37	18	3	1	1	44
Texas, other	17	173	72.8	7	6	3	3	5	1	6	1	12	1	1	25

TABLE 8.—AVERAGE AND CLASSIFIED HOURS ACTUALLY WORKED IN ONE WEEK, 1929, BY OCCUPATION AND DISTRICT—Continued

### *Oil wells—Continued*

### Pipe lines

Engineers and pumpers:														
California	3	253	47.9	1	1	1	3	238	2	6	1	1	18	
Louisiana	9	117	55.2	1	5	1	1	52	2	38	1	1	1	
Oklahoma	10	478	58.1	1	1	1	1	98	3	200	8	2	55	
Texas, Gulf	3	278	51.6	8	1	7	1	72	1	158	4	10	2	
Texas, other	13	603	54.4	19	8	5	8	13	1	374	3	32	1	
Fremen:														
California	3	163	48.0					2		159	1			
Louisiana	5	36	51.1					2		21	1			
Oklahoma	2	13	51.1					1		8	6			
Texas, Gulf	3	43	54.7					1		51	5			
Texas, other	4	43	53.6					1		40	2			

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070

## Importance and Characteristics of the Industry

The importance and growth of the petroleum industry may be gauged to a large degree by a recent report of the Bureau of Mines,<sup>2</sup> from which the following data are taken and in which production by States is traced from 1859 when oil was produced in only two States (New York and Pennsylvania) through 1928 when oil was being produced in 19 of the 48 States. For the first 16 years of the period the average production was only 4,629,500 barrels per year. In 1890 (only 15 years later) oil was being produced in 13 States and reached an aggregate production in that year of 45,824,000 barrels. In 1900 the production for the United States reached 63,621,000 barrels; in 1910, 209,557,000 barrels; in 1920, 442,929,000 barrels, and in 1928, 900,364,000 barrels.

Table 9, taken from the report above noted, shows, by States, the number of barrels of petroleum produced in 1928. The production of Texas (256,888,000 barrels) was greater than that of any other State in that year. Oklahoma stood next, with 249,558,000 barrels, and California third, with 231,982,000 barrels. These three States produced, in 1928, 82.0 per cent of the entire oil production of the United States.

TABLE 9.—PRODUCTION OF PETROLEUM IN 1928, BY STATES

State	Production (in 42-gallon barrels)	State	Production (in 42-gallon barrels)
New York	2,573,000	Texas	256,888,000
Pennsylvania	9,876,000	Oklahoma	249,558,000
Ohio	7,030,000	Wyoming	21,415,000
West Virginia	5,704,000	Michigan	595,000
California	231,982,000	Louisiana	21,626,000
Kentucky	7,325,000	New Mexico	959,000
Tennessee	47,000	Montana	3,925,000
Colorado	2,722,000	Arkansas	32,295,000
Indiana	1,053,000		
Illinois	6,459,000	Total	900,364,000
Kansas	38,332,000		

*Number of producing wells.*—The approximate number of producing wells and the average production per well per day, by States, in 1928, is shown in Table 10. There were in the United States in 1928, 327,800 producing wells with an average production of 7.6 barrels per day per well.

The average production in the various States shows a very wide range. In the old producing States, like New York and Pennsylvania, the average was only 0.3 or 0.4 of a barrel per well per day. Some of the wells in Pennsylvania were drilled more than 40 years ago and have been producing over that entire period. The average for California was 57.6 barrels per well per day. The Gulf coast district of Louisiana, however, led in production with 67.6 barrels per well per day.

<sup>2</sup> United States. Department of Commerce. Bureau of Mines. Mineral Resources of the United States, 1927, P. II, pp. 520, 521, 527, and the Annual Petroleum Statement for 1929.

TABLE 10.—APPROXIMATE NUMBER OF PRODUCING OIL WELLS AND AVERAGE PRODUCTION PER WELL PER DAY, 1928, BY STATES

State	Approximate number of wells	Average production per well per day (barrels) <sup>1</sup>	State	Approximate number of wells	Average production per well per day (barrels) <sup>1</sup>
Arkansas	4,520	19.3	New York	16,500	.4
California	10,710	57.6	Ohio:		
Colorado	210	39.9	Central and eastern	20,950	.7
Illinois	16,340	1.1	Northwestern	16,950	.3
Indiana:			Total, Ohio	37,900	.5
Southwestern	1,140	2.3	Oklahoma	62,900	11.0
Northeastern	900	.3	Pennsylvania	78,600	.3
Total, Indiana	2,040	1.4	Texas:		
Kansas	19,800	5.4	Gulf coast	2,850	39.6
Kentucky	13,740	1.5	Rest of State	32,900	19.1
Louisiana:			Total, Texas	35,750	20.8
Gulf coast	320	67.6	West Virginia	19,600	.8
Northern	3,500	10.8	Wyoming	3,520	16.6
Total, Louisiana	3,820	14.8	Other	290	-----
Michigan	400	4.6	United States	327,800	7.6
Montana	1,100	10.5			
New Mexico	260	10.1			

<sup>1</sup> Revised figures.<sup>2</sup> Alaska, Tennessee, and Utah.

*Oil wells and dry holes.*—Table 11 shows the number of wells completed in selected periods and years from 1859 to 1928 and the per cent of them that produced no oil. Earlier years are grouped to save space. Approximately 25,000 wells are now drilled each year.

The financial hazards of the oil-producing industry are forcibly portrayed by the large number of wells drilled per year that produce no oil. Some of these wells cost as much as \$50,000 to \$100,000 each. The number of dry wells has materially increased in recent years, showing a gradual upward trend from the period 1908 to 1914 when 17 per cent were dry, to 1928 when 32 per cent, or nearly one in every three, proved to be a complete loss. It is estimated that these dry holes cost the oil industry an average of \$200,000,000 per year.

TABLE 11.—APPROXIMATE NUMBER OF WELLS DRILLED FOR OIL AND GAS AND NUMBER AND PER CENT OF DRY HOLES, 1859 TO 1928

Period	Total wells completed	Dry holes		Period	Total wells completed	Dry holes	
		Number	Per cent of total			Number	Per cent of total
1859-1907	287,922	54,940	19	1925	25,623	6,734	26
1908-1914	129,851	22,682	17	1926	29,319	7,965	27
1915-1922	197,580	41,326	21	1927	24,143	7,210	30
1923	24,438	5,883	24	1928	22,331	7,078	32
1924	21,888	5,044	23				

*Transportation of oil.*—When once petroleum has been brought to the surface by either flowing or pumping wells, it is usually placed in near-by temporary storage tanks and later transported to a "tank farm" (a field containing many tanks) or to a refinery. The three

principal means of transportation are the pipe lines, tank railway cars, and ocean tank ships. The railway tank cars range in capacity from 150 to 300 barrels, and are used in petroleum fields where the flow of oil is so small that it will not justify the expense of the construction of a pipe line.

The pipe lines form the principal means of crude petroleum transportation. They generally range in size from 4 to 12 inches in diameter, although some are as large as 18 inches. They are usually buried 2 feet or more underground, the depth depending on the extent of cold weather encountered in each locality. Pumping stations are located along the pipe lines at intervals of 15 to 50 miles, depending on the gravity of the oil and the topography of the country.

Storage tanks, ranging in size from 10,000 to 50,000 barrels, are maintained at each pumping station. The oil is forced into them by means of powerful pumps and from these tanks is again pumped to the next station. Leaks in the pipe lines frequently develop. These are detected by pressure gauges located at each pumping station and by line walkers or riders who are constantly traveling over the lines. All stations are connected by telephone or telegraph. Whenever leaks are discovered, the pumper who is forcing the oil over the leaky line is directed to reverse his pumps and the one at the next station continues pumping. The oil is thus carried back into the storage tank from one end and drawn out into tanks at the forward end of the line.

In 1926, the latest year for which figures are available, there were 44,470 miles of trunk lines in the United States, and 45,700 miles of gathering lines. Texas had 9,470 miles of trunk lines; Oklahoma, 8,220; California, 3,210. Oklahoma had 10,960 miles of gathering lines; Texas 6,060, and California 1,800 miles. Louisiana came below several other States with 1,890 miles of trunk lines and only 720 miles of gathering lines.

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### Recent Changes in Wages and Hours of Labor

**I**NFORMATION received by the bureau regarding recent wage changes is presented below in two distinct groups: Part 1 relates to manufacturing establishments only, the data being reported direct to the bureau by the same establishments that report monthly figures regarding volume of employment; part 2 presents data obtained from new trade agreements and other miscellaneous sources. Although the effort is made, it is not always possible to avoid duplication of data as between parts 1 and 2.

#### Part 1. Wage Changes by Manufacturing Industries, January, 1930

FIFTY-FOUR establishments in 13 industries reported wage-rate increases during the month ending January 15, 1930. These increases averaged 2.9 per cent and affected 21,301 employees, or 40 per cent of all employees in the establishments concerned.

Twenty-six establishments in 14 industries reported wage-rate decreases during the same period. These decreases averaged 9.7 per cent and affected 2,676 employees, or 54 per cent of all employees in the establishments concerned.

WAGE ADJUSTMENTS OCCURRING BETWEEN DECEMBER 15, 1929, AND JANUARY  
15, 1930

Industry	Establishments		Per cent of increase or decrease in wage rate		Employees affected		
	Total number reporting	Number reporting increase or decrease in wage rates	Range	Average	Total number	Per cent of employees	
						In establishments reporting increase or decrease in wage rates	In all establishments reporting
<i>Increases</i>							
Confectionery.....	284	3	4.4-15.0	8.9	22	9	(0)
Flour.....	336	1	20.0	20.0	12	20	(0)
Baking.....	660	2	3.0- 6.6	6.1	44	7	(0)
Clothing, women's.....	213	1	5.0	5.0	225	60	1
Foundry and machine-shop products.....	1,040	5	3.0- 6.4	4.8	615	34	(0)
Machine tools.....	145	2	2.5- 5.0	4.2	15	8	(0)
Lumber, sawmills.....	577	1	16.0	16.0	16	8	(0)
Printing, book and job.....	383	18	1.1-10.0	2.3	1,740	35	4
Printing, newspapers.....	399	13	1.0-12.1	3.3	765	19	1
Chemicals.....	146	2	2.0-10.0	7.9	31	2	(0)
Automobiles.....	205	1	5.0	5.0	1,089	95	(0)
Car building and repairing, electric-railroad.....	450	1	7.7	7.7	44	37	(0)
Electrical machinery, apparatus and supplies.....	176	4	2.7- 9.1	2.7	16,683	44	8
<i>Decreases</i>							
Flour.....	336	1	22.1	22.1	6	11	(0)
Cotton goods.....	472	3	5.0-10.0	9.7	370	74	(0)
Hosiery and knit goods.....	320	3	5.0-10.0	8.4	167	22	(0)
Dyeing and finishing textiles.....	111	1	10.0	10.0	126	100	(0)
Iron and steel.....	196	1	2.5	2.5	42	8	(0)
Lumber, sawmills.....	577	5	1.3-15.0	10.8	1,052	84	1
Lumber, millwork.....	319	1	10.0	10.0	27	26	(0)
Boots and shoes.....	302	1	5.0	5.0	25	63	(0)
Paper boxes.....	184	1	6.1	6.1	344	99	2
Fertilizers.....	169	2	5.0- 8.0	7.4	77	25	
Brick, tile, and terra cotta.....	618	2	10.0-20.0	14.7	32	86	(0)
Cigars and cigarettes.....	208	3	5.0-10.0	8.4	93	18	(0)
Automobiles.....	205	1	10.0	10.0	290	100	(0)
Radio.....	41	1	33.3	33.3	25	69	(0)

<sup>1</sup> Less than one-half of 1 per cent.

## Part 2. Wage Changes Reported by Trade-Unions, etc., November, 1929, to February, 1930

CHANGES reported in this group consist principally of union wages reported to the bureau by labor organizations.

The reports as tabulated in the following table cover 52,606 workers, of whom 35,769 are in the building trades. Of the 52,606 reporting, 35,087 workers, all of whom were in the building trades, were reported to be working a 5-day week. In two cities, Tulsa, Okla., and San Francisco, Calif., all the building trades adopted the 5-day week on January 1.

Wage changes in the building trades ranged from a decrease of 12½ cents per hour in Brownsville, Tex., for plasterers, to an increase of 20 cents per hour in New York City for electrical workers.

The printing trades show increases ranging from \$1 a week to as high as \$3.60 per week.

Other workers received various increases as 1 cent per hour for street-railway workers in Des Moines, Iowa, \$10 to \$15 per month for train dispatchers of a few Eastern railroads, \$5 to \$10 per month for water-department employees in Warren, Ohio, and \$215 to \$550 per year for regular policemen and firemen in Philadelphia, Pa.

TABLE 2.—RECENT WAGE CHANGES, BY INDUSTRY, OCCUPATION, AND LOCALITY

Industry, occupation, and locality	Date of change	Rate of wages		Hours per week	
		Before change	After change	Before change	After change
Building trades:					
Bricklayers, Plainfield, N. J.	Dec. 1	\$1.75	\$1.92½	44	40
Carpenters, San Jose, Calif.	Feb. 1	(1)	(1)	44	40
Electrical workers—					
New York, N. Y.	Nov. 1	1.65	1.85	40	40
San Antonio, Tex.	Jan. 1	1.06½	1.12½	48	44
Hod carriers, Portland, Oreg.	Jan. 8	1.00	1.12½	44	44
Laborers, Portland, Oreg.	Jan. 1	.68¾	.75	44	44
Mortar men, hand, Portland, Oreg.	Jan. 8	1.00	1.12½	44	44
Painters, Duluth, Minn.	Jan. 1	1.00	1.00	44	40
Plasterers—					
Duluth, Minn.	do	1.25	1.25	44	40
Brownsville, Tex.	Nov. —	1.50	1.37½	44	44
Downers Grove, Ill.	Dec. 6	1.62½	1.70	44	40
All building trades—					
Tulsa, Okla.	Jan. 1	(1)	(1)	44	40
San Francisco, Calif.	do	(1)	(1)	44	40
Chauffeurs and teamsters:					
Drivers, New York, N. Y.	Nov. 19	32.00	37.00	60	52
Coal drivers, Philadelphia, Pa.	Dec. 7	27.00	30.00	55½	52½
Clothing, men's, Cincinnati, Ohio	Dec. 29	(1)	(1)	48	44
Upholsterers: Seamstresses, Los Angeles, Calif.	Nov. —	25.00	27.50	44	44
Motion-picture operators:					
Chicago, Ill.	Jan. 10	2 105.00	2 107.50	35	35
Topeka, Kans.	Dec. 23	2 40.00	2 45.00	49	49
Printing and publishing:					
Bookbinders, New York, N. Y.	Nov. 11	2 47.00	2 50.00	44	44
Compositors and machine operators—					
Battle Creek, Mich.—					
Newspaper, day	Nov. 1	40.00	42.00	48	48
Newspaper, night	do	42.00	45.00	48	48
Job work, day	do	36.50	38.50	44	44
Job work, night	do	38.50	41.50	44	44
Chattanooga, Tenn.—					
Newspaper, day	Nov. 2	42.00	44.50	45	45
Newspaper, night	do	45.00	47.50	45	45
Duluth, Minn.—					
Newspaper, day	Nov. 1	45.00	46.50	44	44
Newspaper, night	do	48.00	49.50	44	44
Indianapolis, Ind.—					
Job work, day	Jan. 1	47.00	49.00	44	44
Job work, night	do	51.00	53.00	44	44
Kalamazoo, Mich.—					
Newspaper, day	Nov. 15	42.00	45.00	48	48
Newspaper, night	do	44.00	47.00	48	48
Lafayette, Ind.—					
Newspaper, day	Dec. 25	43.00	45.00	48	48
Newspaper, night	do	45.00	47.00	48	48
Lawrence, Mass.—					
Hand compositors, day	Nov. 1	43.00	43.00	48	45
Hand compositors, night		46.00	46.00	48	45
Linotype operators, day	Jan. 1	33.00	39.60	44	44
Linotype operators, night	do	(1)	39.60	44	40
Lowell, Mass.—					
Newspaper, day	do	.80¾	.95¾	48	45
Newspaper, night	do	.95¾	1.02¾	48	45
Job work	do	.82	.85	44	44
Madison, Wis.—					
Newspaper, day	Nov. 1	45.00	46.00	48	48
Newspaper, night	do	47.00	48.50	48	48

1 Not reported.

2 Minimum.

3 5 per cent increase.

TABLE 2.—RECENT WAGE CHANGES, BY INDUSTRY, OCCUPATION, AND LOCALITY—Continued

Industry, occupation, and locality	Date of change	Rate of wages		Hours per week		
		Before change	After change	Before change	After change	
<b>Printing and publishing—Continued.</b>						
Compositors and machine operators—Continued.						
Meadville, Pa.—						
Newspaper, day	Jan. 1	\$43.20	\$46.08	48	48	
Newspaper, night	do	47.00	49.92	48	48	
Job work	do	39.60	42.24	44	44	
New Bedford, Mass., newspaper	Dec. 2	42.00	43.00	48	48	
Haverhill Mass., newspaper	Jan. 2	42.00	43.00	48	48	
Pawtucket, R. I., newspaper	Nov. 1	50.00	52.00	48	48	
Pocatello, Idaho—						
Job work, day	do	45.00	46.50	44	44	
Job work, night	do	48.00	49.50	44	44	
Providence, R. I.—						
Newspaper, day	do	52.00	54.00	48	48	
Newspaper, night	do	55.00	57.00	45	45	
Rock Island, Ill., job work	Dec. 1	40.50	42.00	44	44	
Schenectady, N. Y.—						
Newspaper, day	Nov. 1	49.00	50.00	45	45	
Newspaper, night	do	52.50	53.50	45	45	
Tulsa, Okla., newspaper	Feb. 1	(1)	(1)	44	44	
Vincennes, Ind.—						
Compositors, newspaper, day	Nov. 1	40.00	42.00	48	46	
Compositors, newspaper, night	do	45.00	45.00	48	46	
Compositors, job work, day	do	(1)	40.00	48	46	
Compositors, job work, night	do	(1)	43.00	48	46	
Machine operators, newspaper, day	do	(1)	43.00	48	46	
Machine operators, newspaper, night	do	(1)	46.00	48	46	
Machine operators, job work, day	do	(1)	41.00	48	46	
Machine operators, job work, night	do	(1)	44.00	48	46	
Machinist operators, newspaper, day	do	(1)	43.00	48	46	
Machinist operators, newspaper, night	do	(1)	46.00	48	46	
Machinist operators, job work, day	do	(1)	41.00	48	46	
Machinist operators, job work, night	do	(1)	44.00	48	46	
Pressmen, Houston, Tex., newspaper	Nov. 30	46.00	47.50	47	47	
Stereotypers, Harrisburg, Pa.—						
Day	Jan. 1	48.00	49.00	48	48	
Night	do	50.00	51.00	48	48	
Railway workers:						
Clerks, Owensboro, Ky.	do	(1)	16	48	48	
Train dispatchers—						
New York, New Haven & Hartford R. R.	Nov. 8	250.00	260.00	(1)	(1)	
Pittsburgh, Shawmut & Northern R. R.	Jan. 1	215.00	225.00	(1)	(1)	
Rutland Railroad	Nov. 1	{ 242.50 237.50	257.50 252.50	(1) (1)	(1) (1)	
Chief dispatchers, New York, New Haven & Hartford R. R.	Nov. 8	275.00	285.00	(1)	(1)	
Stationary engineers: Minneapolis, Minn.	Nov. 1	Per hour .80	Per hour 1.00	(1)	(1)	
Street railway workers:						
Des Moines, Iowa—						
Motormen	do	.53	.54	6 8	6 8	
Conductors	do	.56	.57	6 8	6 8	
Shop men	do	.59	.60	6 8	6 8	
Seattle, Wash., street car men	Jan. 1	2.70	2.74	6 8	6 8	
Municipal employees:						
Policemen and firemen, Philadelphia, Pa.—						
Superintendent	do	5,500.00	6,050.00	(1)	(1)	
Assistant superintendent	do	4,000.00	4,400.00	(1)	(1)	
Inspector	do	2,800.00	3,080.00	(1)	(1)	
Captains	do	2,550.00	2,800.00	(1)	(1)	
Street sergeants	do	2,250.00	2,475.00	(1)	(1)	
House sergeants	do	2,150.00	2,365.00	(1)	(1)	
Patrolmen, first year	do	6 4.50	6 5.00	(1)	(1)	
Patrolmen, second year	do	6 5.00	6 5.50	(1)	(1)	
Patrolmen, third year and after	do	6 5.50	6 6.00	(1)	(1)	
Captain of detectives	do	3,350.00	3,685.00	(1)	(1)	
Lieutenant of detectives	do	2,500.00	2,750.00	(1)	(1)	
Water department, Warren, Ohio—						
Office girls	do	125.00	135.00	48	48	
Meter readers	do	115.00	125.00	48	48	
Foremen	do	150.00	160.00	48	48	
Meter repairmen	do	175.00	185.00	48	48	
Operators at filter plant	do	160.00	165.00	48	48	
Assistant operators	do	150.00	155.00	48	48	
Draftsmen	do	160.00	170.00	48	48	

<sup>1</sup> Not reported.<sup>2</sup> Minimum.<sup>3</sup> 50 cents increase.<sup>4</sup> Increase per day.<sup>5</sup> Per day.

## Recent Wage Changes for Maintenance-of-Way Employees

Recent reports received by the bureau, showing wage changes in the various departments of railroad maintenance-of-way employees, November, 1929, to January, 1930, inclusive, cover 30,412 workers, 20,330 of whom are section laborers. Increases for this class of work ranged from 1 cent to 4 cents per hour. As shown in the grouping below no increases were had by section laborers on three roads, although other departments on the same roads received increases. Section hands, however, are included in Table 3 for comparative purposes.

TABLE 3.—RECENT WAGE CHANGES—MAINTENANCE-OF-WAY EMPLOYEES

Road	Increase per hour	New rate per hour	Date of change
Road A	\$0.00	\$0.27½-\$0.39	Nov. 1, 1929
Road B	.01	.38 - .48	Nov. 16, 1929
Road C	.02	.42 - .44	Dec. 16, 1929
Road D	.00	.21 - .32	Jan. 1, 1930
Road E	.00	.28 - .31½	Nov. 1, 1929
Road F	.01- .04	.37 - .46	Jan. 1, 1930
Road G	.01- .0234	.39 - .43	Do.

Other groups showed increases as follows: Foremen ranged from \$2.50 to \$12.17 per month, mechanics from 2 to 5 cents per hour, helpers from 1 to 5 cents per hour, engineers from \$5 to \$24.80 per month, and firemen from \$2.50 to \$17.61 per month. A few other minor groups show corresponding changes as above.

## Recent Wage Changes for Railroad Signalmen

A total of 815 signalmen on nine railroads received wage increases from November 1, 1929, to January 1, 1930, inclusive. Rates of increases ranged from 2 to 5 cents per hour. Rates of increases, new rates, and date of changes are shown in Table 4 for the principal group.

TABLE 4.—RECENT WAGE CHANGES—SIGNALMEN AND SIGNAL MAINTAINERS

Road	Increase per hour	New rate per hour	Date of change
Road A	\$0.03-\$0.04	\$0.82	Nov. 1, 1929
Road B	(1)	.80	Dec. 1, 1929
Road C	.05	.80	Do.
Road Ca	.05	.85	Do.
Road D	.02	.80	Nov. 1, 1929
Road E	.02	.80	Do.
Road F	.05	.80	Jan. 1, 1930
Road G	.03	.78	Do.
Road H	.05	.80	Dec. 1, 1929
Road I	.02	.80	Nov. 1, 1929

<sup>1</sup> Not reported.

### Extent of 5-Day Week in the Building Trades

ACCORDING to the information available to the Bureau of Labor Statistics, and which is believed to be only partially complete, the 5-day week is now in existence for one or more of the building trades in 97 cities and towns. These are listed in the following table, which gives also the number of building-trades employees working the 5-day week. In several instances the number of workers shown for a city has been estimated on the basis of known data for cities of similar size.

This compilation shows a total of 349,296 building-trades employees now on a 5-day week. In 17 of these cities, with 271,996 workers, all building trades are on the 5-day week basis.

NUMBER WORKING 5-DAY WEEK IN BUILDING TRADES

City	Number	City	Number	City	Number
Aberdeen, Wash.	289	Indianapolis, Ind.	1,729	Portsmouth, N. H.	75
Allentown, Pa.	210	Jamestown, N. Y.	747	Portland, Oreg.	3,805
Alliance, Ohio	30	Jersey City, N. J.	400	Poughkeepsie, N. Y.	32
Asheville, N. C.	607	Joliet, Ill.	32	Providence, R. I.	725
Atlantic City, N. J.	1,296	Kingston, N. J.	65	Reading, Pa.	85
Bakersfield, Calif.	15	Lawrence, Mass.	38	Roxbury, Mass.	1,000
Baltimore, Md.	6,130	Long Beach, Calif.	62	Salem, Calif.	16
Birmingham, Ala.	1,923	Lorain, Ohio	33	Salinas, Calif.	20
Boston, Mass.	25,582	Los Angeles, Calif.	1,176	San Francisco, Calif.	20,000
Bradford, Pa.	15	Louisville, Ky.	908	Santa Barbara, Calif.	59
Bridgeport, Conn.	258	Lowell, Mass.	500	Schenectady, N. Y.	58
Buffalo, N. Y.	355	Madison, Wis.	254	Scranton, Pa.	430
Butte, Mont.	207	Manchester, N. H.	109	Seattle, Wash.	5,901
Chattanooga, Tenn.	40	Memphis, Tenn.	322	Sharon, Pa.	25
Chicago, Ill.	21,050	Miami, Fla.	68	Shreveport, La.	10
Cincinnati, Ohio	1,425	Middletown, N. Y.	30	South Bend, Ind.	500
Cleveland, Ohio	23,670	Milwaukee, Wis.	258	Spokane, Wash.	298
Columbus, Ohio	228	Newark, N. J.	9,840	Springfield, Mass.	542
Dayton, Ohio	215	New Brighton, Conn.	62	Steubenville, Ohio	26
Denver, Colo.	1,695	Newburg, N. Y.	28	St. Louis, Mo.	18,001
Dubuque, Iowa	110	Newton, Calif.	190	Streater, Ill.	40
Duluth, Minn.	125	New York, N. Y.	142,974	Tacoma, Wash.	585
Elizabeth, N. J.	1,148	Niagara Falls, N. Y.	300	Toledo, Ohio	290
Elyria, Ohio	25	North Cambridge, Mass.	500	Tulsa, Okla.	6,225
Erie, Pa.	658	Norwalk, Conn.	30	Venice, Calif.	50
Evansville, Ind.	170	Oakland, Calif.	4,037	Warren, Ohio	32
Everett, Wash.	30	Oklahoma City, Okla.	100	Washington, D. C.	3,646
Fresno, Calif.	800	Omaha, Nebr.	30	West Palm Beach, Fla.	5,500
Grand Rapids, Mich.	36	Perth Amboy, N. J.	520	Wilkes Barre, Pa.	50
Hamilton, Ohio	200	Philadelphia, Pa.	4,967	Worcester, Mass.	263
Hammond, Ind.	1,300	Pittsburgh, Pa.	17,897	Youngstown, Ohio	2,361
Haverhill, Mass.	138	Pittsfield, Mass.	60	Total	349,296
Houston, Tex.	205	Plainfield, N. J.	195		

### Wages of Seamen, 1929

THE following data showing wage rates of seamen on American and foreign vessels are from Merchant Marine Statistics, 1929, published by the Bureau of Navigation of the United States Department of Commerce.

The report states that all wages shown in the tables, except American, are from consular reports. The American figures are averages taken from reports of the shipping commissioners. The wages on foreign vessels are stated in the United States equivalents of the foreign values, taken at the exchange rate on January 1 of the year named. When more than one rate has been reported for foreign vessels, due to length of service or other conditions, the highest is usually given in the table. On Dutch tank steamers the wages in the deck department are about 10 per cent more than those listed. The wages on American

motor ships average about 10 per cent more than on steamships. On German motor ships the engineers receive \$5 per month more and the other personnel in the engineering department \$3 more than on steamships.

Table 1 gives the average monthly wage rates on January 1, 1929, of four typical classes of seamen on vessels of American and foreign registry.

TABLE 1.—AVERAGE MONTHLY WAGES OF CERTAIN CLASSES OF SEAMEN ON AMERICAN AND FOREIGN STEAM AND MOTOR CARGO VESSELS OF 5,000 GROSS TONS AND OVER, JANUARY 1, 1929

Nationality of vessels	Able seamen	Carpenters	Chief engineers	Firemen
American:				
Private	\$64	\$68	\$280	\$63
United States Shipping Board	62	80	261	65
British	44	63	147	46
Danish	42	47	168	43
Dutch	40	46	151	42
French	21	24	152	24
German	30	35	126	32
Italian	29	35	91	31
Norwegian	42	47	140	44
Spanish	33	38	195	32
Swedish	42	44	146	37

<sup>1</sup> On motor vessels, \$227.

Data similar to those given in Table 1 are presented in Table 2 for all classes of seamen, as of January 1 of 1927, 1928, and 1929.

TABLE 2.—AVERAGE MONTHLY WAGES OF SEAMEN ON AMERICAN AND FOREIGN STEAM AND MOTOR CARGO VESSELS OF 5,000 GROSS TONS AND OVER, JANUARY 1, 1927, 1928, AND 1929

Position	American						British			Danish			Dutch		
	Private			U. S. Shipping Board			1927	1928	1929	1927	1928	1929	1927	1928	1929
	1927	1928	1929	1927	1928	1929									
<b>Deck department:</b>															
First mate	\$174	\$178	\$182	\$184	\$185	\$185	\$112	\$112	\$112	\$144	\$140	\$137	\$111	\$111	\$111
Second mate	153	155	160	164	165	165	77	77	77	112	108	97	84	84	84
Third mate	137	140	143	149	150	150	58	59	59	64	62	60	54	54	54
Fourth mate	116	121	121	150	125	128	51	51	51	64	62	60			
Boatswain	72	73	74	74	75	75	51	51	51	49	48	47	46	46	46
Carpenter	77	76	68	70	79	80	63	63	63	49	48	47	46	46	46
Seaman, able	59	60	64	62	62	62	44	44	44	43	42	42	40	40	40
Seaman, ordinary	44	45	45	47	47	47	29	29	29	21	21	21	20	20	20
<b>Engineer department:</b>															
Chief engineer	268	267	280	263	262	261	147	147	147	173	171	168	151	151	151
Second engineer	175	177	183	184	185	187	112	112	112	128	126	121	103	103	103
Third engineer	154	156	161	164	165	168	77	77	77	93	91	91	72	72	72
Fourth engineer	138	141	145	149	150	152	58	59	59	75	72	71	46	46	46
Junior engineer							51	51	51	49	53	53			
Fireman	62	63	63	65	65	65	46	46	46	45	43	43	42	42	42
Greaser	68	69	71	72	72	72	49	49	49	45	48	47	46	46	46
Water tender	68	70	71	72	72	72	49	49	49	45	43	43			
Coal passer or wiper	52	53	55	58	58	58	44	44	44	30	29	29	34	34	34
<b>Steward department:</b>															
Chief steward	126	122	122	122	120	121	71	71	70	80	78	78			
Second steward	93	96	103	100	100	100	46	46	46						
Cook	102	100	100	97	100	100	66	66	66	59	58	57			
Second cook	81	78	78	81	79	80	43	43	43	29	29	29			
Mess steward	47	47	49	48	48	51	40	40	40						
Mess boy	41	42	42	42	42	43				11	11	11			

<sup>1</sup> On the largest vessels, with superior certificate, after 3 years, \$122.

<sup>2</sup> On the largest vessels, with superior certificate, after 3 years, \$83.

<sup>3</sup> On motor vessels, \$227.

<sup>4</sup> On motor vessels, \$146.

<sup>5</sup> On motor vessels, \$95.

<sup>6</sup> On motor vessels, \$62.

<sup>7</sup> On motor vessels, \$51.

TABLE 2.—AVERAGE MONTHLY WAGES OF SEAMEN ON AMERICAN AND FOREIGN STEAM AND MOTOR CARGO VESSELS OF 5,000 GROSS TONS AND OVER, JANUARY 1, 1927, 1928, AND 1929—Continued

Position	French			German			Italian			Norwegian			Spanish			Swedish			
	1927	1928	1929	1927	1928	1929	1927	1928	1929	1927	1928	1929	1927	1928	1929	1927	1928	1929	
Deck department:																			
First mate	\$79	\$79	\$102	\$69	\$79	\$86	\$55	\$72	\$72	\$139	\$154	\$154	\$115	\$128	\$122	\$100	\$105	\$105	
Second mate	53	53	63	56	62	69	46	60	60	114	120	120	76	86	81	74	80	80	
Third mate				63	42	48	52	39	54	54	88	93	93	65	73	69	59	60	60
Fourth mate				33	37	39	37			63	70	70							
Boatswain	24	24	24	29	33	35	28	46	46	48	47	47	34	38	36	46	46	46	
Carpenter	24	24	24	29	33	35	27	35	35	51	47	47	31	35	33	46	44	44	
Seaman, able	21	21	21	24	27	30	22	29	29	43	43	42	30	33	33	40	42	42	
Seaman, ordinary	19	19	19	12	14	14		19	19	23	23	22	26	29	28	33	30	30	
Engineer department:																			
Chief engineer	109	108	152	102	112	126	76	91	91	152	141	140	183	205	195	148	146	146	
Second engineer	77	77	96	69	79	86	55	72	72	101	103	103	115	128	122	90	92	92	
Third engineer	61	60	63	56	62	69	46	60	60	88	84	84	80	90	84	72	69	69	
Fourth engineer	50	50	63	42	48	52	39	54	54	63	70	70				55	55	55	
Junior engineer							28	31	34										
Fireman	24	24	24	27	30	32	24	31	31	44	44	44	31	34	32	40	37	37	
Greaser	23	23	23	28	31	34	24			25	25		31	34	32	43	43	43	
Water tender						31	34						34	38	36				
Coal passer or wiper	21	21	21	—	26	28	22	28	28	25	25	25	26	29	28	28	24	24	
Steward department:																			
Chief steward	28		107		62	35	28	27	27	114	101	101	38	43	41	73	74	74	
Second steward					49	26													
Cook	23	23	23	29	33	35		32	32	76	80	80	35	39	37	48	50	50	
Second cook	16	16	16	20	21	24	30	30							32		16		
Mess steward	19	19	19	12	14	14	21	30	30				20	22	21				
Mess boy	8	9	9	6	7	7	12	16	16	13	13	13	15	16	15	13	13	13	

Table 3 shows the variations in the wage rates of seamen on American merchant vessels of 500 gross tons and over in 1929, by destination of vessel.

TABLE 3.—AVERAGE MONTHLY WAGES PAID ON AMERICAN MERCHANT VESSELS OF 500 GROSS TONS AND OVER IN 1929, BY DESTINATION OF VESSEL

Occupation	Destination of vessel								
	Great Britain	Continental Europe	South America	West Indies, Mexico, and Central America	Atlantic and Gulf coasting trade	Asia and Australia	Pacific coasting trade	Africa	Atlantic to Pacific ports, and vice versa
Steam vessels:									
Able seaman	\$64	\$62	\$61	\$61	\$62	\$62	\$66	\$62	\$61
Boatswain	73	71	73	73	71	71	71	70	70
Carpenter	80	79	79	78	77	77	80	78	77
First mate	184	183	183	177	174	183	169	185	178
Second mate	163	163	161	155	152	161	148	164	155
Firemen	66	65	63	64	64	63	67	64	63
Trimmer	59	53	56	55	55	57	54	56	56
First engineer	242	247	251	244	245	266	223	264	253
Second engineer	178	179	179	172	171	182	165	185	174
Chief radio operator	105	105	104	102	100	102	101	104	102
Second radio operator	90	90	90	92	90	90	78	90	90
Sailing vessels:									
Able seaman	45	45	56	58	54	52	67	45	58
Boatswain	50	50	65	87	67	72	50	50	68
Carpenter					85				85
First mate	75	75	82	84	83	100	102	75	115
Second mate			75	73	71		110		103

### Average Earnings of Workers in Great Britain and Northern Ireland, 1924 and 1928

THE British Ministry of Labor has recently issued figures showing the comparative earnings and hours of labor of workers in a number of industries in 1924 and 1928, respectively. The 1924 data were collected in 1925, and in 1929 schedules were sent to the employers who had responded at the earlier date, inquiring as to the number of workers employed in the week ending October 27, 1928 (by sex, so far as this could be given), the total wages paid them in that week, and the number on short time during the week, with the average hours, per capita, lost by these workers. Details as to the method of tabulating the figures obtained were given in the Labor Review for December, 1929 (p. 155), together with the comparative data for some of the industries covered. In its issues for November and December, 1929, the Ministry of Labor Gazette published the same data for the other industries for which returns were received. The following table shows the number employed in the specified week of 1928 by the firms replying to the questionnaires of both dates, the average weekly earnings for both periods, and the per cent of change the 1928 earnings show when compared with those for 1924.

TABLE 1.—COMPARATIVE AVERAGE EARNINGS AND NUMBER AFFECTED, 1924 AND 1928, BY INDUSTRY

[Conversion on basis of shilling = 24.3 cents; penny = 2.0 cents]

Industry	Number employed week ending Oct. 27, 1928	Average earnings in selected week				Per cent of change in weekly earnings	
		1924		1928			
		English cur- rency	U. S. cur- rency	English cur- rency	U. S. cur- rency		
<i>Metal industries</i>							
Pig-iron manufacture	17,174	62 4	\$15.17	59 1	\$14.38	-5.2	
Smelting, rolling, etc., of iron and steel	113,471	60 6	14.72	60 1	14.62	-.7	
Tinplate manufacture	18,706	65 3	15.88	56 10	13.83	-12.9	
Smelting, rolling, and casting of nonferrous metals	25,922	57 0	13.87	58 0	14.11	+1.8	
Brass founding and finishing	18,586	44 8	10.87	46 5	11.29	+3.9	
Bedstead manufacture	1,905	48 8	11.84	49 5	12.02	+1.5	
Sheet-metal working	37,911	44 2	10.75	44 6	10.83	+.8	
Tubes (wrought iron and steel)	13,462	53 1	12.92	58 10	14.32	+10.9	
Light castings	13,836	49 5	12.02	52 3	12.71	+5.7	
Hollow ware	4,859	40 5	9.83	41 5	10.08	+2.5	
Wire drawing, weaving, etc.	12,086	50 9	12.35	52 10	12.86	+4.1	
Anchor and chain making	803	45 5	11.05	40 7	9.87	-10.6	
Screw, nail, nut, bolt, etc., manufacture	10,958	35 4	8.60	36 9	8.94	+4.1	
Needle, pin, fishhook, etc., manufacture	3,538	33 4	8.11	34 2	8.31	+2.5	
<i>Engineering, etc.:</i>							
Marine	37,768	52 1	12.67	53 0	12.90	+1.8	
Agricultural	10,446	46 8	11.36	48 7	11.82	+4.1	
Textile	36,061	43 5	10.56	46 0	11.19	+6.0	
Aircraft	11,407	55 7	13.52	60 0	14.60	+7.9	
Structural, etc.	28,075	53 4	12.98	56 4	13.71	+5.6	
Electrical machinery and apparatus, scientific instruments, etc.	116,843	45 3	11.01	46 0	11.19	+1.6	
Motor vehicles and cycles							
Larger firms	118,839	58 2	14.15	62 1	15.11	+6.7	
Smaller firms	11,521	46 4	11.27	47 0	11.44	+1.4	
General engineering	206,908	51 1	12.43	53 8	13.06	+5.0	
Total, engineering	637,966	50 8	12.33	53 2	12.94	+4.9	
Ship and boat building and repairing	105,513	54 5	13.24	53 10	13.10	-1.1	
Cutlery, tool, etc., manufacture	16,623	43 7	10.60	44 1	10.73	+1.1	

TABLE 1.—COMPARATIVE AVERAGE EARNINGS AND NUMBER AFFECTED, 1924 AND 1928, BY INDUSTRY—Continued

[Conversion on basis of shilling = 24.3 cents; penny = 2.0 cents]

Industry	Number employed week ending Oct. 27, 1928	Average earnings in selected week				Per cent of change in weekly earnings	
		1924		1928			
		English cur- rency	U. S. cur- rency	English cur- rency	U. S. cur- rency		
<b>Metal industries—Continued</b>							
Farriery and general smiths' work	3,393	49 9	12.11	50 8	12.33	+1.9	
Railway carriage and wagon building and repairing	17,408	55 0	13.38	54 5	13.24	-1.0	
Textile machinery accessory manufacture	7,144	45 6	11.07	43 8	10.63	-4.0	
Gold, silver, jewelry, etc.	14,249	43 8	10.63	45 11	11.17	+5.2	
Heating and domestic engineering	2,759	58 1	14.13	56 9	13.81	-2.3	
Other metal industries	29,348	46 7	11.33	46 7	11.33	---	
<b>Building and allied industries</b>							
Building and contracting	155,094	59 10	14.56	59 9	14.54	-1	
Electrical installation	2,147	54 0	13.14	52 10	12.86	-2.2	
<b>Woodworking and furniture</b>							
Furniture manufacture	39,668	51 5	12.51	53 1	12.92	+3.2	
Carriage, cart, etc., building and repairing	7,499	54 7	13.28	52 2	12.69	-4.5	
Packing case, box, etc., manufacture	6,189	45 9	11.13	47 6	11.56	+3.9	
Mill sawing, machine joinery, etc.	35,415	51 5	12.51	50 9	12.35	-1.3	
Coopering	1,959	52 8	12.82	51 0	12.41	-3.2	
Basket making	855	39 11	9.71	40 10	9.94	+2.4	
Other woodworking	7,356	50 11	12.39	52 2	12.69	+2.4	
<b>Miscellaneous industries</b>							
Fell mongering and leather tanning	24,092	52 8	12.82	51 9	12.59	-1.7	
Saddlery and leather goods making	7,282	37 8	9.17	37 5	9.10	-7	
India rubber manufacture	30,884	44 7	10.85	45 3	11.01	+1.5	
Brush and broom making	5,397	38 2	9.29	40 5	9.83	+6.0	
Piano, organ, and musical instrument making (other than metal)	16,348	64 10	15.78	65 10	16.02	+1.6	
Quarrying	29,435	52 8	12.82	52 4	12.73	-6	
Metalliferous and shale mining	9,661	48 4	11.76	48 0	11.68	-7	
Carting and warehousing	41,017	51 9	12.59	52 5	12.75	+1.3	
Waste reclamation (other than metal)	6,079	36 8	8.92	36 8	8.92	---	
Other industries	37,622	48 0	11.68	48 10	11.88	+1.7	
<b>Public utility services</b>							
Local authority (nontrading services)	175,211	51 1	12.43	51 9	12.59	+1.3	
Gas supply:							
Local authorities	26,988	61 1	14.86	62 6	15.21	+2.3	
Other	57,415	60 7	14.74	63 5	15.43	+4.7	
Total, gas supply	84,403	60 9	14.78	63 3	15.39	+4.1	
Electricity supply:							
Local authorities	30,767	64 3	15.63	66 11	16.28	+4.2	
Other	12,660	66 5	16.16	69 0	16.79	+3.9	
Total, electricity	43,427	64 11	15.80	67 8	16.47	+4.2	
Tramway and omnibus services:							
Local authorities	56,648	64 3	15.63	65 2	15.86	+1.4	
Other	48,588	75 5	18.35	73 8	17.92	-2.3	
Total	105,236	69 8	16.95	69 5	16.89	-4	
Water supply:							
Local authorities	10,323	56 9	13.81	58 3	14.17	+2.6	
Other	7,753	60 7	14.74	60 9	14.78	+3	
Total, water supply	18,076	58 4	14.19	59 3	14.42	+1.6	
Canal, dock, and harbor authority services	20,701	76 7	18.63	77 7	18.88	+1.3	
Government industrial establishments	91,296	61 8	15.01	63 0	15.33	+2.2	

For the most part, the changes shown are rather small, and the increases considerably outnumber the decreases (45 to 19, with two groups showing no change). Increases amounting to 5 per cent or more are found in the manufacture of wrought iron and steel tubes (10.9 per cent), light castings (5.7 per cent), textile engineering (6 per cent), manufacture of aircraft (7.9 per cent), structural engineering (5.6 per cent), manufacture by the larger firms of motor vehicles and cycles (6.7 per cent), general engineering (5 per cent), gold, silver, and jewelry (5.2 per cent), and brush and broom making (6 per cent). The industries showing decreases of over 5 per cent are the manufacture of pig iron (5.2 per cent), tinplate manufacture (12.9 per cent), and anchor and chain making (10.6 per cent).

#### Extent of Short-Time Work

THE changes in average earnings reflect to a considerable degree changes in wage rates, but they are also affected by the amount of short time. The following table shows the proportion of workers affected by short time in the week ending October 27, 1928, the average number of hours they lost, and the average number of hours lost per capita for all workers employed by the firms reporting at both dates. Workers who were laid off for the whole of any of the weeks specified have been considered as unemployed, and have not been taken into account in compiling the statistics.

TABLE 2.—EXTENT OF SHORT-TIME WORKING, 1924 AND 1928

Industry	Week ending Oct. 27, 1928			Average hours lost per worker employed	
	Number employed	Per cent on short time	Average hours lost by those on short time	Week ending Oct. 18, 1924	Week ending Oct. 27, 1928
<i>Metal industries</i>					
Pig-iron manufacture	16,081	6.4	22.9	1.3	1.5
Smelting, rolling, etc., of iron and steel	102,736	13.6	13.1	2.2	1.8
Tinplate manufacture	18,473	37.0	13.2	.4	4.9
Smelting, rolling, and casting of nonferrous metals	25,183	3.7	15.9	.3	.6
Brass founding and finishing	18,349	3.3	7.8	.3	.3
Bedstead manufacture	1,869	6.1	14.2	.7	.9
Sheet-metal working	36,775	5.8	8.5	.8	.5
Tubes (wrought iron and steel)	12,648	7.7	9.4	1.4	.7
Light castings	13,742	16.8	7.6	.6	1.3
Hollow ware	4,859	6.6	16.5	.6	1.1
Wire drawing, weaving, etc.	11,072	4.6	13.2	1.2	.6
Anchor and chain making	456	27.2	18.1	3.6	4.9
Screw, nail, nut, bolt, etc., manufacture	10,795	23.1	5.3	1.3	1.2
Needle, pin, fishhook, etc., manufacture	3,422	21.3	11.8	2.6	2.5
Engineering, etc.:					
Marine	37,768	1.1	7.9	.3	.1
Agricultural	10,400	7.7	14.3	1.6	1.1
Textile	34,511	37.0	16.5	7.5	6.1
Aircraft	11,407	(1)	15.0	(1)	
Structural, etc.	27,276	5.4	9.5	.2	.5
Electrical machinery and apparatus, scientific instruments, etc.	115,754	.7	7.2	.2	.1
Motor vehicles and cycles:					
Larger firms	112,172	3.3	8.0	.3	.3
Smaller firms	10,837	2.7	10.8	.2	.3
General engineering	257,954	3.9	9.2	.5	.4
Total, engineering	618,079	4.9	12.2	.9	.6

TABLE 2.—EXTENT OF SHORT-TIME WORKING, 1924 AND 1928—Continued

Industry	Week ending Oct. 27, 1928			Average hours lost per worker employed	
	Number em- ployed	Per cent on short time	Aver- age hours lost by those on short time	Week ending Oct. 18, 1924	Week ending Oct. 27, 1928
<i>Metal industries—Continued</i>					
Ship and boat building and repairing	103,558	2.6	16.9	.2	.4
Cutlery, tool, etc., manufacturing	13,828	15.7	12.3	1.9	1.9
Farriery and general smiths' work	3,290	3.2	10.3	.2	.3
Railway carriage and wagon building and repairing	17,200	15.8	13.8	1.1	2.2
Textile machinery accessory manufacture	6,911	42.2	10.9	2.3	4.6
Gold, silver, jewelry, etc.	13,467	5.8	9.6	.9	.6
Heating and domestic engineering	2,687	.7	12.4	(0)	.1
Other metal industries	26,757	8.8	9.7	1.0	.9
<i>Building and allied industries</i>					
Building and contracting	142,736	1.5	10.0	(0)	.2
Electrical installation	1,946	3.3	14.4	.3	.5
<i>Woodworking and furniture</i>					
Furniture manufacture	38,330	3.6	8.0	.2	.3
Carriage, cart, etc., building and repairing	7,003	8.8	10.0	.4	.9
Packing case, box, etc., manufacture	6,189	12.5	9.8	1.9	1.2
Mill sawing, machine joinery, etc.	33,237	13.2	11.8	.3	1.5
Coopering	1,831	11.6	9.6	.4	1.1
Basket making	598	6.0	13.6	1.4	.8
Other woodworking	6,754	8.9	7.6	.4	.7
<i>Miscellaneous industries</i>					
Fell mongering and leather tanning	23,060	24.2	10.9	1.2	2.6
Saddlery and leather goods	7,206	9.5	10.0	.5	.9
India rubber manufacture	30,353	15.6	9.8	.9	1.5
Brush and broom making	4,682	28.7	8.3	2.1	2.4
Piano, organ and musical instrument making (other than metal)	16,272	3.9	7.2	.1	.3
Quarrying	28,329	15.3	7.6	.3	1.2
Metalliferous and shale mining	9,229	21.6	8.6	1.8	1.9
Carting and warehousing	37,610	1.8	14.7	.3	.3
Waste reclamation (other than metal)	5,808	11.1	8.1	1.0	.9
Other industries	36,539	7.8	8.4	.6	.7

<sup>1</sup> Less than 0.05.

The changes in the average amount of time lost by all the workers employed by the firms reporting at both dates are for the most part rather small, though considerable increases are found in the tinplate industry, in the manufacture of textile machinery accessories, in the anchor and chain industry, in the building of railway equipment, in mill sawing, machine joinery, etc., in fellmongering and leather tanning, and in quarrying. In all these industries the increase in short time had been accompanied by a reduction in average earnings. "It may be observed that in the case of building and contracting the returns indicate that some employers did not regard time lost by wet weather as short time."

#### Average Earnings of Males and Females

IT IS customary to pay women lower wage rates than men, so that any change in the proportion of sexes in an industry might easily

affect the level of earnings. Pains were therefore taken to secure the numbers and earnings of male and female workers separately.

Employers furnishing information were asked, on the form of return, to show separately, if possible, the numbers and earnings of male and female workers, respectively. A considerable proportion of the returns received gave no information under these headings; but for those industries in which the numbers of male and female workpeople, separately distinguished in the returns, were sufficiently large to provide a substantial basis for calculations as to the changes in average earnings between October, 1924, and October, 1928, particulars are given in the following table. The particulars given relate only to workpeople employed by those firms who supplied information for both dates.

TABLE 3.—COMPARATIVE AVERAGE EARNINGS, 1924 AND 1928, BY INDUSTRY AND SEX

*Males*

[Conversions on basis of shilling = 24.3 cents; penny = 2.0 cents]

Industry	Num- ber em- ployed, week ending Oct. 27, 1928	Average earnings in selected week				Per cent of change in weekly earn- ings	
		1924		1928			
		English cur- rency	U. S. cur- rency	English cur- rency	U. S. cur- rency		
<i>Metal industries</i>							
Pig-iron manufacture	16,833	62 4	\$15.17	59 2	\$14.40	-5.1	
Smelting, rolling, etc., of iron and steel	108,528	61 0	14.84	60 6	14.72	-.8	
Tinplate manufacture	12,553	72 2	17.56	61 8	15.01	-14.6	
Smelting, rolling, and casting of nonferrous metals	21,694	59 1	14.38	60 1	14.62	+1.7	
Brass founding and finishing	11,020	51 1	12.43	54 2	13.18	+6.0	
Sheet-metal working	19,686	55 9	13.56	57 9	14.05	+3.6	
Light castings manufacture	10,788	52 10	12.86	55 8	13.54	+5.4	
Engineering	542,958	52 11	12.88	56 0	13.63	+5.8	
Ship and boat building and repairing	102,757	54 6	13.26	54 0	13.14	-.9	
Cutlery, tool, etc., manufacture	9,663	49 2	11.96	50 7	12.31	+2.8	
Railway carriage and wagon building and repairing	17,121	55 3	13.44	54 7	13.28	-1.2	
<i>Building and allied industries</i>							
Building and contracting	153,552	59 11	14.58	59 10	14.56	-.1	
Electrical installation	2,147	54 0	13.14	52 10	12.86	-2.2	
<i>Woodworking and furniture</i>							
Furniture manufacture	26,547	57 6	13.99	59 1	14.38	+2.7	
Mill sawing and machine joinery	32,473	52 2	12.69	51 6	12.53	-1.3	
Packing case and box manufacture	4,801	49 6	12.04	51 4	12.49	+3.7	
<i>Miscellaneous industries</i>							
Fellmongering and leather tanning	17,810	56 2	13.66	54 11	13.36	-2.2	
India-rubber manufacture	16,180	56 11	13.85	57 8	14.03	+1.3	
Quarrying	28,712	52 9	12.84	52 5	12.75	-.6	
Metalliferous and shale mining	9,621	48 5	11.78	48 2	11.72	-.5	
Carting and warehousing	37,324	54 0	13.14	54 10	13.34	+1.6	
<i>Public utility services</i>							
Local authority (nontrading services)	160,797	51 1	12.43	51 11	12.63	+1.7	
Gas supply	81,279	61 2	14.88	63 9	15.51	+4.2	
Electricity supply	41,717	65 3	15.88	68 1	16.57	+4.3	
Tramway and omnibus service	99,000	70 3	17.09	70 1	17.05	-.2	
Water supply	17,838	58 8	14.28	59 7	14.50	+1.5	
Canal, dock, and harbor authority services	20,558	76 10	18.70	77 11	18.96	+1.4	
Government industrial establishments	88,530	62 4	15.17	63 9	15.51	+2.3	

TABLE 3.—COMPARATIVE AVERAGE EARNINGS, 1924 AND 1928, BY INDUSTRY AND SEX—Continued

*Females*

[Conversion on basis of shilling = 24.3 cents; penny = 2.0 cents]

Industry	Number employed, week ending Oct. 27, 1928	Average earnings in selected week				Per cent of change in weekly earnings	
		1924		1928			
		English currency	U. S. currency	English currency	U. S. currency		
<i>Metal industries</i>							
Brass founding and finishing	3,214	26 4	\$6.41	26 2	\$6.37	-0.7	
Sheet-metal working	14,499	25 9	6.27	26 6	6.45	+2.9	
Engineering	57,072	27 0	6.57	28 0	6.81	+3.7	
Cutlery, tool, etc., manufacture	2,508	22 0	5.35	23 1	5.62	+4.9	
<i>Furniture</i>							
Furniture manufacture	7,775	27 1	6.59	29 4	7.14	+8.2	
<i>Miscellaneous industries</i>							
Fellmongering and leather tanning	2,535	27 11	6.79	29 2	7.10	+4.4	
India-rubber manufacture	11,732	29 1	7.08	28 3	6.87	-2.9	
Warehousing	2,936	26 6	6.45	26 6	6.45	-	
Government industrial establishments	2,766	38 4	9.33	39 1	9.51	+2.6	

Among the industries included in the foregoing table, those showing the greatest percentage increase in the average earnings of male work people between October, 1924, and October, 1928, are light castings manufacture (5.4 per cent), engineering (5.8 per cent), and brass founding and finishing (6 per cent); the greatest reductions in the average earnings of males are found in pig-iron manufacture (5.1 per cent) and tinplate manufacture (14.6 per cent). Among female workers the chief variations were increases of 4.4 per cent in fell mongering and leather tanning, 4.9 per cent in the manufacture of cutlery and tools, and 8.2 per cent in furniture manufacture.

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### Wage Rates Established by Collective Agreements in Italy

THE scale of wages adopted in an agreement signed November 21, 1929, by the silk drawers and twisters and their employers in the Province of Cremona, effective from June 1, 1929, to May 31, 1930, as furnished by Homer Brett, American consul at Milan, is given below. Agreements with scales of wages varying not more than a fraction of 1 per cent in any case were signed during the month for the Provinces of Ancona, Trento, and Mantova.

Scales of the hat makers' union with their employers in the Province of Alexandria, made August 7, 1929, and effective September 1, 1929, to December 31, 1930, taken from the gazette of the Prefecture of Alexandria and furnished by William W. Heard, American consul at Turin, are given also.

The remaining scales are taken from the September, October, and November numbers of *Il Lavoro Fascista*, the official Fascist labor paper of Italy, and cover the occupations mentioned, in the Provinces specified.

## WAGE RATES ESTABLISHED BY AGREEMENT IN ITALY

[Conversions into United States currency made on basis of lira = 5.23 cents]

Occupation and Province	Rates fixed by agreement		Occupation and Province	Rates fixed by agreement	
	Lire	United States currency		Lire	United States currency
<i>Silk drawers and twisters—Cremona</i>					
Apprentices	4.90	\$0.26	<i>Felt hat industry—Alexandria—Continued</i>		
Brushing girls—			After 30 years	5.00	\$0.26
First class	5.65	.30	20 to 30 years	4.00	.21
Second class	6.45	.34	10 to 20 years	3.00	.16
Unskilled spinning girls:			<i>Hat makers—Pistoia</i>		
First class	7.05	.37	Cutters	8.00; 6.50	.42; .34
Second class	7.85	.41	Preparers	6.00; 4.00	.31; .21
Skilled spinning girls	9.40	.49	Seamstresses	7.50; 5.25	.39; .07
Filature assistants	13.50	.71	Finishers and trimmers	6.50; 4.00	.34; .21
Cocoon pickers	7.35	.38	Ironers	8.00; 6.50	.45; .24
Waste girls	7.85	.41	Storehouse keepers	12.00-18.00	.63; .94
Knotting girls	8.35	.44	Machinists	16.00	.84
Testing girls (gangers)	9.55	.50	<i>Silk drawers and twisters—Milan</i>		
Tie-binding girls	9.30	.49	<i>Silk spinners:</i>		
Skein-folding girls	9.50	.50	Apprentices		
Inspectors	10.50	.55	First class	5.00	.26
Waste store, men	15.30	.80	Second class	4.90	.26
Waste store, girls	8.00	.42	Third class	4.85	.25
Mechanics and carpenters	21.00	1.10	<i>Brushing girls—</i>		
Men under 18 years	15.00	.78	First class	5.75-5.60	.30-.29
Men 18 years and over	16.50	.86	Second class	6.60-6.35	.35-.33
Women under 17 years	6.80	.36	Spinners	8.80-8.50	.46-.44
Women 17 years and over	7.80	.41	Skilled	9.55-9.25	.50-.48
Apprentices	4.60	.24	Cocoon pickers	7.50-7.20	.39-.38
Winders	8.00	.42	Knotting girls	8.50-8.20	.44-.43
Reelers	8.20	.43	<i>Silk room:</i>		
Couplers	8.90	.47	First class	9.70	.51
Skein-winding girls	8.80	.46	Second class	9.50	.50
Menders	8.90	.47	Third class	9.40	.49
Spinning and thread:			<i>Folders</i>	9.65-9.35	.50-.49
Women	9.15	.48	Assistants	10.50-10.20	.55-.53
Men under 17 years	14.00	.73	<i>Qualified helpers:</i>		
Men over 17 years	16.50	.86	First class	15.50	.81
Knotters	8.10	.42	Second class	15.20	.79
Inspectors	9.00	.47	Third class	15.00	.78
Folders or selectors	9.15	.48	Engineers and car-		
Assistants	13.50	.71	penters	21.00-19.80	1.10-1.04
Firemen	1 500-600	26.15-31.38	Firemen	1 600-525	31.38-27.46
<i>Felt hat industry—Alexandria</i>					
Hat workers, male	3.20	0.17	<i>Unqualified helpers:</i>		
Hat workers, female	1.60	.08	Men, 16 years—		
Laborers, under 18 years	2.76	.14	First class	13.00	.68
Laborers, section	2.86	.15	Second class	12.80	.67
Contract workers:			Third class	12.70	.66
Hat makers, male	4.11	.21	Men, 16 to 18 years	14.50-14.20	.76-.74
Hat makers, female	2.10	.11	Men, over 18 years	15.00-14.70	.78-.77
First class	4.41	.23	Women, under 17 years	7.00-6.70	.37-.35
Second class	4.11	.21	Women, over 17 years	8.00-7.70	.42-.40
Third class	3.96	.21	<i>Reelers:</i>		
Fourth class	3.63	.19	Apprentices		
Fifth class	3.46	.18	First class	4.65	.24
Sixth class	3.12	.16	Second class	4.50	.24
Seventh class	2.94	.15	Reelers	8.00-7.80	.42-.41
Apprentices:			Transferrers	8.20-8.00	.43-.42
13 to 14 years of age	.62	.03	Reelers and transferrers	8.10-7.90	.42-.41
14 to 15 years of age	.71	.04	Full reelers	8.90-8.65	.47-.45
15 to 16 years of age	.80	.04	<i>Spinners and twisters:</i>		
16 years of age	.89	.05	Women	9.30-9.00	.49-.47
			Men, under 17 years	15.00-14.60	.78-.76
			Men, over 17 years	16.00-15.60	.84-.82

<sup>1</sup> Per month.

## WAGE RATES ESTABLISHED BY AGREEMENT IN ITALY—Continued

[Conversions into United States currency made on basis of lira = 5.23 cents]

Occupation and Province	Rates fixed by agreement		Occupation and Province	Rates fixed by agreement	
	Lire	United States currency		Lire	United States currency
<i>Millers—Carrara</i>					
Head workers.....	<i>Per day</i>	<i>Per day</i>	<i>Building trades—Naples—</i>		
Rollers.....	29.40	\$1.54	Continued		
Sifters.....	26.40	1.38	Laborers:		
Sifters.....	24.75	1.29	Under 18 years—	<i>Per hour</i>	<i>Per hour</i>
Laborers.....	23.65	1.24	First class.....	1.85	\$0.10
Mechanics and carpenters.....	24.00	1.26	Second class.....	1.70	.09
Helpers:			Boys, 15 to 18 years.....	1.50	.08
18 to 21 years of age.....	18.00	.94	Boys, under 15 years.....	1.10	.06
Under 18 years of age.....	15.00	.78			
Draymen.....	<sup>1</sup> 145-150	<sup>2</sup> 7.58-7.85	Pointers:		
<i>Millers—Massa</i>			First class.....	2.90	.15
Head workers.....	26.40	1.38	Second class.....	2.50	.13
Rollers.....	23.50	1.23	Helpers.....	2.50	.13
Sifters.....	22.00	1.15			
Laborers.....	22.00	1.15	<i>Terracers:</i>		
Mechanics and carpenters.....	23.80	1.24	First class.....	2.20	.12
Helpers:			Second class.....	2.15	.11
18 to 21 years of age.....	18.00	.94	<i>Cement workers:</i>		
Under 18 years of age.....	15.00	.78	First class.....	2.90	.15
Draymen.....	<sup>1</sup> 145-150	<sup>2</sup> 7.58-7.85	Second class.....	2.50	.13
<i>Brickmakers—Grosseto</i>			Calciners.....	2.40	.13
Common brick, 26 cm.....	<i>Per 100</i>	<i>Per 100</i>	Chiselers:		
Common brick, 30 cm.....	35.40	1.85	First class.....	4.15	.22
Medium brick, 30 cm.....	36.10	1.89	Second class.....	3.30	.17
Tile makers, 35 cm.....	38.10	1.99			
	63.75	3.33	<i>Surveyors:</i>		
	<i>Per hour</i>	<i>Per hour</i>	First class.....	4.15	.22
Mixers, machine.....	2.45	.13	Second class.....	3.70	.19
Feeders, machine.....	3.05	.16	<i>Pavers:</i>	3.30	.17
<i>Building trades—Naples</i>			<i>Asphalt workers:</i>	3.30	.17
Bricklayers:	<i>Per hour</i>	<i>Per hour</i>	Laborers.....	2.30	.12
First class.....	2.90	.15			
Second class.....	2.50	.13	<i>Tile roofers:</i>		
Carpenters:			First class.....	4.40	.23
First class.....	2.90	.15	Second class.....	3.30	.17
Second class.....	2.50	.13			
			<i>Varnishers:</i>		
			First class.....	3.60	.19
			Second class.....	3.50	.18
			Helpers.....	2.15	.11
			Whitewashers.....	2.20	.12
			<i>Plasterers:</i>		
			Ornamental, second		
			class.....	4.70	.25
			Plain.....	3.20	.17

<sup>1</sup> Per month.<sup>2</sup> Per week.

## Wages in the Sugar Industry of Java

THE figures in the following table, showing the average daily wages of workers in the sugar industry in Java, are from the Statistical Abstract for the Netherlands East Indies, 1928.<sup>1</sup>

<sup>1</sup> Netherlands East Indies. Departement van Landbouw, Nijverheid en Handel, Centraal Kantoor voor de Statistiek in Nederlandsch-Indië. Weltevreden, 1929, p. 193.

## AVERAGE DAILY WAGES OF WORKERS IN THE SUGAR INDUSTRY IN JAVA, 1924 TO 1928

	1924		1925		1926		1927		1928	
	Dutch cents	U. S. currency								
Regular workers:										
Professional laborers.....	113	\$0.43	114	\$0.46	114	\$0.46	114	\$0.46	114	\$0.46
Helpers.....	61	.23	60	.24	58	.23	58	.23	58	.23
Total.....	85	.32	85	.34	85	.34	85	.34	85	.34
Season laborers:										
Factory foremen.....	65	.25	64	.26	62	.25	63	.25	66	.27
Factory coolies, male.....	46	.18	46	.18	46	.18	46	.18	46	.18
Factory coolies, female.....	36	.14	36	.14	35	.14	36	.14	37	.15
Field watchers.....	36	.14	35	.14	34	.14	34	.14	35	.14
Railway coolies.....	41	.16	41	.16	41	.16	41	.16	41	.16
Total, male.....	45	.17	48	.19	45	.18	45	.18	46	.18
Total, female.....	36	.14	36	.14	35	.14	36	.14	37	.15
Grand total.....	59	.23	59	.24	56	.22	56	.22	57	.23

# TREND OF EMPLOYMENT

## Summary for January, 1930

EMPLOYMENT decreased 2.6 per cent in January, 1930, as compared with December, 1929, and pay-roll totals decreased 5.4 per cent, according to reports made to the Bureau of Labor Statistics.

The industrial groups surveyed, the number of establishments reporting in each group, the number of employees covered, and the total pay rolls for one week, for both December and January, together with the per cent of change in January, are shown in the following summary.

### SUMMARY OF EMPLOYMENT AND PAY-ROLL TOTALS, JANUARY, 1930, AND DECEMBER, 1929

Industrial group	Establishments	Employment		Per cent of change	Pay roll in one week		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
1. Manufacturing	12,321	3,239,353	3,197,153	1 -1.8	\$85,786,819	\$82,113,074	1 -4.8
2. Coal mining	1,449	336,338	333,061	-1.0	10,528,091	9,069,079	-13.9
Anthracite	162	121,391	115,710	-4.7	4,785,556	3,690,494	-22.9
Bituminous	1,287	214,947	217,371	+1.1	5,742,535	5,378,585	-6.3
3. Metalliferous mining	350	61,546	59,837	-2.8	1,876,333	1,745,910	-7.0
4. Quarrying and non-metallic mining	586	31,258	27,591	-11.7	765,895	645,047	-15.8
5. Public utilities	9,657	721,781	711,906	-1.4	21,773,012	21,388,623	-2.1
6. Trade	8,295	354,885	389,855	+18.3	8,602,270	7,353,547	-14.5
Wholesale	1,757	60,571	59,052	-2.5	1,887,832	1,802,907	-4.5
Retail	6,538	294,314	230,803	-21.6	6,714,438	5,550,640	-17.3
7. Hotels	1,796	150,949	155,209	+2.8	2,586,935	2,624,153	+1.4
8. Canning and preserving	403	23,862	17,947	-24.8	435,963	345,749	-26.7
Total	34,857	4,919,972	4,792,669	-2.6	132,349,158	125,285,182	-5.4

### RECAPITULATION BY GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISION							
New England <sup>1</sup>	2,204	461,798	450,018	-2.6	\$11,449,896	\$11,109,032	-3.0
Middle Atlantic <sup>2</sup>	6,065	1,428,490	1,391,105	-2.6	42,204,575	39,369,205	-6.7
East North Central <sup>3</sup>	8,308	1,450,421	1,429,485	-1.4	40,897,901	39,021,786	-4.6
West North Central <sup>4</sup>	3,952	315,193	304,950	-3.2	7,996,304	7,627,137	-4.6
South Atlantic <sup>5</sup>	4,130	489,204	480,934	-1.7	10,470,284	10,066,728	-3.9
East South Central <sup>6</sup>	2,099	206,472	200,930	-2.7	4,121,153	3,964,993	-3.8
West South Central <sup>7</sup>	2,410	178,458	172,806	-3.1	4,197,500	3,960,362	-5.6
Mountain <sup>8</sup>	1,300	106,495	102,511	-3.7	3,258,733	3,023,038	-7.2
Pacific <sup>9</sup>	4,299	283,441	259,840	-8.3	7,752,812	7,062,901	-8.9
All divisions	34,857	4,919,972	4,792,669	-2.6	132,349,158	125,285,182	-5.4

<sup>1</sup> Weighted per cent of change for the combined 54 manufacturing industries repeated from Table 2, p. 154; the remaining per cents of change, including total, are unweighted.

<sup>2</sup> Cash payments only, see text, page 171.

<sup>3</sup> Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.

<sup>4</sup> New Jersey, New York, Pennsylvania.

<sup>5</sup> Illinois, Indiana, Michigan, Ohio, Wisconsin.

<sup>6</sup> Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota.

<sup>7</sup> Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia.

<sup>8</sup> Alabama, Kentucky, Mississippi, Tennessee.

<sup>9</sup> Arkansas, Louisiana, Oklahoma, Texas.

<sup>10</sup> Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, Utah, Wyoming.

<sup>11</sup> California, Oregon, Washington.

The winter-resort hotel season brought about an increase in hotel employment, and bituminous coal mining showed an increase in number of workers, but each of the remaining industrial groups showed decreases, to a large extent, seasonal in January.

The number of employees given represents the number of employees on the pay rolls ending nearest the 15th of the month, this as a rule meaning the number actually employed several days in advance of the 15th. The figures of the several industrial groups are not weighted according to the relative importance of each industry, as shown by the United States Census, and therefore the per cents of change shown for the total figures represent only the changes in the establishments reporting. (Compare Note 1, to summary table, manufacturing industries, and also Note 1, Table 1.)

For convenient reference the latest data available relating to all employees, excluding executives and officials, on class I railroads, drawn from Interstate Commerce Commission reports, are shown in the following statement. These reports are for the months of November and December instead of for December and January, consequently the figures can not be combined with those presented in the foregoing table.

#### EMPLOYMENT AND PAY-ROLL TOTALS, CLASS I RAILROADS

Industry	Employment		Per cent of change	Amount of pay roll in entire month		Per cent of change
	Nov. 15, 1929	Dec. 15, 1929		November, 1929	December, 1929	
Class I railroads.....	1,864,023	1,588,076	-4.5	\$232,741,287	\$225,999,045	-2.9

The total number of employees included in this summary is nearly 6,500,000 whose combined earnings in one week amounted to approximately \$180,000,000.

#### 1. Employment in Selected Manufacturing Industries in January, 1930

##### Comparison of Employment and Pay-Roll Totals in Manufacturing Industries, December, 1929, and January, 1930

EMPLOYMENT in manufacturing industries decreased 1.8 per cent in January, 1930, as compared with December, 1929, and pay-roll totals decreased 4.8 per cent. These decreases are based upon returns from 12,264 establishments, in 54 manufacturing industries, having in January 3,161,419 employees whose combined earnings in one week were \$81,289,756.

The Bureau of Labor Statistics' weighted index of manufacturing employment for January, 1930, is 90.2 as compared with 91.9 for December, 1929, 94.8 for November, 1929, and 95.2 for January, 1929; the weighted index of pay-roll totals for January, 1930, is 87.6, as compared with 92.0 for December, 1929, 95.1 for November, 1929, and 94.5 for January, 1929. The monthly average for 1926 equals 100.0.

Prior to 1930, decreases in employment in January as compared with December had appeared in five of the six Januaries for which the bureau had comparisons with the preceding December, the decreases in employment having ranged from 0.3 to 1.6 per cent each. A decrease in January is therefore a customary seasonal one, and the decrease of 1.8 per cent in January, 1930, is not notably greater than in preceding years.

The bureau's index of manufacturing employment is constructed on data taken from pay-roll periods ending nearest (generally previous to) the 15th of each month—in other words, approximately the second week of the month.

Beginning with the week starting December 16 the bureau has been receiving *weekly* statements, as to the number of their *employees only*, from a majority of the same establishments which make *monthly* reports, not only as to employment but also as to pay-roll totals, time worked, and wage changes. The object of the weekly reports has been to follow the more sensitive employment fluctuations from week to week.

December and January usually show marked and rapid fluctuations due to the holiday season, and the custom of taking inventory and making repairs in these months. There was a small decrease between the number on the pay roll ending nearest December 15 and the number employed on December 16, as shown by establishments reporting for both periods. There was a greater decrease between December 16 and December 23 and a much greater decrease between December 23 and December 30, but with the beginning of the new year the trend turned upward, January 6 and 13 both showing very substantial gains. Although the level of employment in early January was still below that of early December, the tabulated reports for January 20 and 27, and reports so far received for the weeks of February 3 and 10, show a continuation of the upward trend, indicating that the general course of employment up to the middle of February, 1930, is in accord with the upward course in the same period in previous years.

Two of the main industrial groups—vehicles and leather—showed substantial increases in employment in January as compared with December, the first being due to the notable increase of 7.8 per cent in the automobile industry and the second to the smaller seasonal increase of 2.4 per cent in boots and shoes. Other separate industry increases in employment over the month interval were 1.4 per cent in iron and steel, 7.6 per cent in sugar refining, 5.6 per cent in millinery, 11.0 per cent in fertilizers, 3.2 per cent in agricultural implements, 2.9 per cent in automobile tires, 4.8 per cent in shipbuilding, and smaller increases in textile finishing, women's clothing, hardware, paper and pulp, and smoking tobacco.

The stone-clay-glass, lumber, nonferrous metal, and tobacco industrial groups in January were most affected by decreased employment, a considerable share of the decrease being seasonal. The outstanding separate industry decreases in January were in confectionery, knit goods, stoves, sawmills, furniture, paper boxes, cement, brick, stamped ware, cigars, carriages, pianos, and rubber boots and shoes.

The rayon and radio industries, which are not yet included in the bureau's indexes, both reported losses in number of workers in January, the decreases in employment having been 1.5 per cent and 3.5 per cent, respectively.

Decreased employment was shown in January, as compared with December, in eight of the nine geographic divisions, the eastern divisions showing the smallest decreases; the East North Central division, where the automobile industry is most in evidence, showed an increase of 0.4 per cent.

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL MANUFACTURING ESTABLISHMENTS IN DECEMBER, 1929, AND JANUARY, 1930, BY INDUSTRIES

Industry	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
<b>Food and kindred products</b>	1,817	232,894	226,487	(1)	\$6,046,228	\$5,880,387	(1)
Slaughtering and meat packing	205	92,733	91,589	-1.2	2,443,830	2,405,750	-1.6
Confectionery	284	36,950	33,088	-10.5	604,860	613,543	-11.7
Ice cream	316	10,702	10,344	-3.3	350,741	337,407	-6.2
Flour	336	16,004	15,752	-1.6	437,241	425,949	-2.6
Baking	660	66,673	65,132	-2.3	1,807,789	1,776,632	-1.7
Sugar refining, cane	16	9,832	10,582	+7.6	302,767	321,106	+6.1
<b>Textiles and their products</b>	2,097	589,402	576,986	(1)	11,247,615	10,838,358	(1)
Cotton goods	472	202,623	198,976	-1.8	3,085,194	3,001,433	-2.7
Hosiery and knit goods	320	93,631	88,025	-6.0	1,868,956	1,629,988	-12.8
Silk goods	275	62,650	61,374	-2.0	1,271,062	1,204,986	-5.2
Woolen and worsted goods	179	57,470	56,436	-1.8	1,225,090	1,196,685	-2.3
Carpets and rugs	28	24,492	23,902	-2.4	588,878	562,391	-4.5
Dyeing and finishing textiles	111	30,627	30,728	+0.3	727,308	736,313	+1.2
Clothing, men's	302	63,224	62,939	-0.5	1,384,491	1,399,737	+1.1
Shirts and collars	119	21,295	20,435	-4.0	333,541	300,399	-9.9
Clothing, women's	213	22,619	22,704	+0.8	527,452	551,446	+4.5
Millinery and lace goods	78	10,771	11,377	+5.6	235,643	254,980	+8.2
<b>Iron and steel and their products</b>	1,887	682,163	672,829	(1)	20,271,879	19,340,351	(1)
Iron and steel	196	256,665	260,358	+1.4	7,672,426	7,662,412	-0.1
Cast-iron pipe	41	10,922	10,332	-5.4	253,401	218,553	-13.8
Structural ironwork	173	30,816	29,755	-3.4	942,391	858,999	-8.8
Foundry and machine-shop products	1,040	265,447	259,871	-2.1	8,000,178	7,548,024	-5.7
Hardware	70	30,372	30,509	+0.5	780,546	729,796	-6.5
Machine tools	145	37,966	36,431	-4.0	1,222,471	1,102,197	-9.8
Steam fittings and steam and hot-water heating apparatus	112	31,637	29,755	-5.9	872,009	800,518	-8.2
Stoves	110	18,338	15,818	-13.7	528,457	419,852	-20.6
<b>Lumber and its products</b>	1,300	212,867	200,579	(1)	4,665,695	4,199,871	(1)
Lumber, sawmills	577	121,983	114,256	-6.3	2,535,558	2,191,857	-13.6
Lumber, millwork	319	29,145	28,537	-2.1	662,981	616,856	-7.0
Furniture	413	61,960	57,786	-6.7	1,467,066	1,301,158	-11.3
<b>Leather and its products</b>	430	129,587	131,557	(1)	2,756,965	2,797,390	(1)
Leather	128	26,398	25,877	-2.0	675,103	652,868	-3.3
Boots and shoes	302	103,189	105,680	+2.4	2,081,862	2,144,522	+3.0
<b>Paper and printing</b>	1,103	200,882	206,730	(1)	7,119,288	6,913,937	(1)
Paper and pulp	202	59,560	59,863	+0.5	1,640,644	1,604,014	-2.2
Paper boxes	184	20,186	18,750	-7.1	467,390	423,475	-9.4
Printing, book and job	383	49,241	48,720	-1.1	1,691,406	1,670,226	-1.3
Printing, newspapers	399	80,895	79,397	-1.9	3,319,839	3,216,222	-3.1
<b>Chemicals and allied products</b>	396	106,945	106,687	(1)	3,237,718	3,125,484	(1)
Chemicals	146	38,503	37,234	-3.3	1,092,371	1,027,771	-5.9
Fertilizers	169	9,744	10,811	+11.0	187,682	198,475	+5.8
Petroleum refining	81	58,698	58,642	-0.1	1,957,665	1,890,238	-3.0
<b>Stone, clay, and glass products</b>	968	113,966	104,648	(1)	2,954,184	2,495,632	(1)
Cement	100	20,308	18,498	-8.9	605,621	506,112	-16.4
Brick, tile, and terra cotta	618	34,887	29,299	-16.0	839,614	639,043	-23.9
Pottery	112	19,590	18,844	-3.8	484,787	435,558	-10.2
Glass	120	39,181	37,407	-4.5	1,024,162	914,319	-10.7
<b>Metal products, other than iron and steel</b>	224	46,894	46,343	(1)	1,257,955	1,167,381	(1)
Stamped and enameled ware	71	16,440	15,011	-8.7	368,264	324,071	-12.0
Brass, bronze, and copper products	153	33,364	31,934	-4.3	889,691	843,310	-5.2
<b>Tobacco products</b>	231	58,447	56,331	(1)	1,017,668	887,746	(1)
Chewing and smoking tobacco and snuff	28	7,971	8,100	+1.6	126,330	132,138	+4.6
Cigars and cigarettes	208	51,476	48,231	-6.3	891,338	755,608	-15.2

<sup>1</sup> See footnotes at end of table.

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL MANUFACTURING ESTABLISHMENTS IN DECEMBER, 1929, AND JANUARY, 1930, BY INDUSTRIES—Continued

Industry	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
<b>Vehicles for land transportation.</b>							
Automobiles	1,273	469,910	489,746	(1)	\$13,978,133	\$13,552,260	(1)
Carriages and wagons	205	299,586	322,837	+7.8	8,421,473	8,545,796	+1.5
Car building and repairing, electric-railroad	46	1,194	1,116	-6.5	25,576	24,375	-4.7
Car building and repairing, steam-railroad	450	28,216	28,169	-0.2	914,349	886,977	-3.0
Automobile tires	572	140,914	137,624	-2.3	4,616,735	4,095,112	-11.3
<b>Miscellaneous industries.</b>							
Agricultural implements	521	382,266	378,228	(1)	11,227,581	11,004,877	(1)
Electrical machinery, apparatus, and supplies	83	28,877	29,796	+3.2	864,810	868,702	+0.5
Pianos and organs	176	208,708	203,500	-2.5	6,462,722	6,207,029	-4.0
Rubber boots and shoes	71	6,492	5,397	-16.9	195,923	149,511	-23.7
Automobile tires	11	18,351	17,351	-5.4	456,859	417,167	-8.7
Shipbuilding	36	43,779	45,045	+2.9	1,212,148	1,325,550	+9.4
Rayon <sup>1</sup>	87	39,521	41,405	+4.8	1,212,050	1,213,600	+0.1
Radio <sup>2</sup>	16	23,701	23,340	-1.5	488,490	497,868	+1.9
All industries	41	12,837	12,394	-3.5	334,579	325,450	-2.7
All industries	12,321	3,239,353	3,197,153	(1)	85,780,819	82,113,074	(1)

#### RECAPITULATION BY GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISION <sup>3</sup>							
New England	1,450	384,831	379,019	-1.5	\$9,297,958	\$9,045,275	-2.7
Middle Atlantic	2,841	900,429	884,039	-1.8	25,996,778	24,823,948	-4.5
East North Central	3,137	1,067,347	1,071,586	+0.4	30,279,248	29,151,367	-3.7
West North Central	1,086	171,418	168,573	-1.7	4,324,753	4,189,474	-3.1
South Atlantic	1,566	335,021	329,955	-1.5	6,668,255	6,415,786	-3.8
East South Central	588	119,485	116,272	-2.7	2,251,101	2,154,912	-4.3
West South Central	602	104,575	101,006	-3.4	2,486,775	2,330,622	-6.3
Mountain	214	31,416	29,379	-6.5	912,870	815,897	-10.6
Pacific	747	124,831	117,324	-6.0	3,563,081	3,185,793	-10.6
All divisions	12,321	3,239,353	3,197,153	(1)	85,780,819	82,113,074	(1)

<sup>1</sup> The per cent of change has not been computed for the reason that the figures in the preceding columns are unweighted and refer only to the establishments reporting, for the weighted per cent of change, wherein proper allowance is made for the relative importance of the several industries, so that the figures may represent all establishments of the country in the industries here represented, see Table 2.

<sup>2</sup> The rayon industry was surveyed for the first time for the January–February comparison, and the radio industry for the March–April comparison, and, since the data for computing relative numbers are not yet available, these industries are not included in the bureau's indexes of employment and pay-roll totals. The total figures for all manufacturing industries given in the text, p. 150, do not include rayon or radio.

<sup>3</sup> See footnotes 3 to 11, on p. 149.

TABLE 2.—PER CENT OF CHANGE, DECEMBER, 1929, TO JANUARY, 1930—12 GROUPS OF MANUFACTURING INDUSTRIES AND TOTAL OF ALL INDUSTRIES

[Computed from the index numbers of each group, which are obtained by weighting the index numbers of the several industries of the group, by the number of employees, or wages paid, in the industries]

Group	Per cent of change December, 1929, to January, 1930		Group	Per cent of change December, 1929, to January, 1930	
	Number on pay roll	Amount of pay roll		Number on pay roll	Amount of pay roll
Food and kindred products	-3.0	-2.8	Metal products, other than iron and steel	-5.6	-6.9
Textiles and their products	-1.7	-2.5	Tobacco products	-5.5	-13.1
Iron and steel and their products	-1.6	-4.7	Vehicles for land transportation	+2.3	-5.6
Lumber and its products	-5.9	-11.9	Miscellaneous industries	-0.9	-2.2
Leather and its products	+1.5	+1.4	All industries	-1.8	-4.8
Paper and printing	-1.6	-2.8			
Chemicals and allied products	-0.4	-3.8			
Stone, clay, and glass products	-9.2	-16.0			

#### Comparison of Employment and Pay-Roll Totals in Manufacturing Industries, January, 1930, and January, 1929

THE level of employment in manufacturing industries was 5.3 per cent lower in January, 1930, than in January, 1929, and employees' earnings were 7.3 per cent lower.

Twelve of the 54 separate industries showed gains in employment over this 12-month period and 2 other industries were unchanged as to employment. The outstanding gains were: In shipbuilding, 28.7 per cent; in petroleum refining, 16.1 per cent; in electrical machinery, 11.1 per cent; and in book and job printing, 4.1 per cent.

The greatest falling off in employment over this 12-month period was 37.7 per cent in pianos, followed by 27.6 per cent in automobiles and 24.5 per cent in automobile tires. Somewhat smaller decreases were shown in cement, brick, sawmills, millwork, furniture, steam fittings, stoves, cast-iron pipe, woolen and cotton goods, stamped ware, and brass goods. The iron and steel industry had 5 per cent fewer employees in January, 1930, than in January, 1929, while foundry and machine-shop products' employees were practically unchanged.

Eight of the nine geographic divisions reported fewer employees in January, 1930, than in January, 1929, the Middle Atlantic geographic division showing the smallest decline (1.4 per cent), while the East North Central division, owing to changed conditions in the automobile industry, showed by far the greatest decline (12.1 per cent).

TABLE 3.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN MANUFACTURING INDUSTRIES, JANUARY, 1930, WITH JANUARY, 1929

[The per cents of change for each of the 12 groups of industries and for the total of all industries are weighted in the same manner as are the per cents of change in Table 2]

Industry	Per cent of change January, 1930, compared with January, 1929		Industry	Per cent of change January, 1930, compared with January, 1929	
	Num- ber on pay roll	Amount of pay roll		Num- ber on pay roll	Amount of pay roll
<b>Food and kindred products.</b>			<b>Paper and printing—Con.</b>		
Slaughtering and meat packing.....	-1.1	+0.3	Printing, book and job.....	+4.1	+5.1
Confectionery.....	-2.1	-1.7	Printing, newspapers.....	+2.5	+3.5
Ice cream.....	+0.9	+1.5			
Flour.....	-4.0	-2.9	<b>Chemicals and allied products.</b>	+4.2	+4.2
Baking.....	-0.9	+1.8	Chemicals.....	-3.9	-4.6
Sugar refining, cane.....	-1.0	+1.5	Fertilizers.....	+0.4	-0.7
	+0.2	+2.4	Petroleum refining.....	+16.1	+15.0
<b>Textiles and their products.</b>	<b>-5.2</b>	<b>-8.2</b>			
Cotton goods.....	-8.3	-12.4	<b>Stone, clay, and glass products.</b>	<b>-11.4</b>	<b>-14.7</b>
Hosiery and knit goods.....	-0.5	-0.3	Cement.....	-15.9	-15.0
Silk goods.....	-1.1	-2.8	Brick, tile, and terra cotta.....	-19.0	-25.7
Woolen and worsted goods.....	-10.6	-14.5	Pottery.....	-2.7	-1.6
Carpets and rugs.....	-5.7	-11.1	Glass.....	-5.0	-9.1
Dyeing and finishing textiles.....	-2.6	-8.3			
Clothing, men's.....	-0.9	-4.9	<b>Metal products, other than iron and steel.</b>	<b>-13.9</b>	<b>-20.5</b>
Shirts and collars.....	-1.4	-3.5	Stamped and enameled ware.....	-13.9	-19.0
Clothing, women's.....	-6.6	-9.1	Brass, bronze, and copper products.....	-13.9	-21.0
Millinery and lace goods.....	-2.5	-5.7			
<b>Iron and steel and their products.</b>	<b>-3.3</b>	<b>-7.5</b>	<b>Tobacco products.</b>	<b>+0.1</b>	<b>+0.9</b>
Iron and steel.....	-5.0	-10.9	Chewing and smoking tobacco and snuff.....	+1.1	+5.5
Cast-iron pipe.....	-9.0	-10.1	Cigars and cigarettes.....	(1)	+9.9
Structural ironwork.....	-0.3	-2.2			
Foundry and machine-shop products.....	-0.3	-3.3	<b>Vehicles for land transportation.</b>	<b>-14.2</b>	<b>-16.9</b>
Hardware.....	-4.8	-11.3	Automobiles.....	-27.6	-35.4
Machine tools.....	-0.4	-8.4	Carriages and wagons.....	-10.0	-10.9
Steam fittings and steam and hot-water heating apparatus.....	-14.3	-18.5	Car building and repairing, electric-railroad.....	(1)	+2.5
Stoves.....	-9.9	-12.1	Car building and repairing, steam-railroad.....	+2.3	+8.2
<b>Lumber and its products.</b>	<b>-10.3</b>	<b>-12.7</b>			
Lumber, sawmills.....	-9.1	-9.4	<b>Miscellaneous industries.</b>	<b>+2.3</b>	<b>+3.9</b>
Lumber, millwork.....	-17.3	-19.3	Agricultural implements.....	-2.6	-3.4
Furniture.....	-9.2	-14.8	Electrical machinery, apparatus, and supplies.....	+11.1	+14.0
<b>Leather and its products.</b>	<b>-0.7</b>	<b>-5.3</b>	Pianos and organs.....	-37.7	-41.1
Leather.....	-0.3	+3.1	Rubber boots and shoes.....	-4.9	-0.3
Boots and shoes.....	-0.7	-7.6	Automobile tires.....	-24.5	-25.0
<b>Paper and printing.</b>	<b>+2.5</b>	<b>+3.0</b>	Shipbuilding.....	+28.7	+29.2
Paper and pulp.....	+1.6	+0.7			
Paper boxes.....	+0.7	-1.0	<b>All industries.</b>	<b>-5.3</b>	<b>-7.3</b>

## RECAPITULATION BY GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISION <sup>2</sup>			GEOGRAPHIC DIVISION—contd.		
New England.....	-5.7	-8.5	West South Central.....	+2.1	+5.0
Middle Atlantic.....	-1.4	-2.1	Mountain.....	-4.6	-4.0
East North Central.....	-12.1	-17.2	Pacific.....	-5.8	-5.5
West North Central.....	-2.8	-2.4			
South Atlantic.....	-2.3	-0.7	<b>All divisions.</b>	<b>-5.3</b>	<b>-7.3</b>
East South Central.....	-6.9	-5.9			

<sup>1</sup> No change.<sup>2</sup> See footnotes 3 to 11, p. 149.

**Per Capita Earnings**

PER CAPITA earnings in manufacturing industries in January, 1930, were 3 per cent lower than in December, 1929, and 2.2 per cent lower than in January, 1929.

The per cents of change in per capita earnings in January, 1930, as compared with December, 1929, and as compared with January, 1929, for each industry are shown in Table 4.

TABLE 4.—COMPARISON OF PER CAPITA EARNINGS IN MANUFACTURING INDUSTRIES, JANUARY, 1930, WITH DECEMBER, 1929, AND JANUARY, 1929

Industry	Per cent of change January, 1930, compared with—		Industry	Per cent of change January, 1930, compared with—	
	Decem- ber, 1929	Janu- ary, 1929		Decem- ber, 1929	Janu- ary, 1929
Automobile tires.....	+6.3	-0.7	Paper and pulp.....	-2.8	-0.8
Clothing, women's.....	+3.7	-2.7	Ice cream.....	-2.9	+1.2
Chewing and smoking tobacco and snuff.....	+2.9	-0.3	Petroleum refining.....	-2.9	-0.8
Millinery and lace goods.....	+2.4	-3.2	Silk goods.....	-3.3	-1.9
Carriages and wagons.....	+2.0	-0.9	Rubber boots and shoes.....	-3.5	+4.7
Clothing, men's.....	+1.6	-4.1	Foundry and machine-shop products.....	-3.6	-2.9
Dyeing and finishing textiles.....	+0.9	-6.1	Stamped and enameled ware.....	-3.6	-5.3
Baking.....	+0.6	+2.5	Shipbuilding.....	-4.4	+0.9
Boots and shoes.....	+0.5	-7.2	Fertilizers.....	-4.7	-0.4
Printing, book and job.....	-0.2	+1.4	Furniture.....	-4.9	-6.6
Slaughtering and meat packing.....	-0.3	+0.7	Lumber, millwork.....	-5.0	-2.9
Woolen and worsted goods.....	-0.6	-4.6	Structural ironwork.....	-5.6	-2.9
Brass, bronze, and copper products.....	-1.0	-8.1	Automobiles.....	-5.8	-10.8
Cotton goods.....	-1.0	-4.4	Machine tools.....	-6.1	-8.2
Flour.....	-1.0	+2.5	Shirts and collars.....	-6.1	-2.0
Leather.....	-1.3	+3.2	Glass.....	-6.5	-4.2
Printing, newspapers.....	-1.3	+1.2	Pottery.....	-6.6	+0.5
Confectionery.....	-1.4	+0.6	Hardware.....	-6.9	-6.7
Electrical machinery, apparatus, and supplies.....	-1.5	+2.7	Hosiery and knit goods.....	-7.2	+0.9
Iron and steel.....	-1.5	-5.9	Lumber, sawmills.....	-7.7	-0.3
Sugar refining, cane.....	-1.5	+2.3	Stoves.....	-7.9	-2.2
Carpets and rugs.....	-2.1	-5.6	Cement.....	-8.2	+0.1
Paper boxes.....	-2.4	-1.7	Pianos and organs.....	-8.2	-5.9
Steam fittings and steam and hot-water heating apparatus.....	-2.4	-5.0	Cast-iron pipe.....	-8.8	-1.2
Agricultural implements.....	-2.7	-1.0	Car building and repairing, steam-railroad.....	-9.2	+5.6
Chemicals.....	-2.7	-0.9	Brick, tile, and terra cotta.....	-9.4	-8.3
Car building and repairing, electric-railroad.....	-2.8	+2.4	Cigars and cigarettes.....	-9.5	+0.7
<b>All industries</b> .....				<b>-3.0</b>	<b>-2.2</b>

**Index Numbers of Employment and Pay-Roll Totals in Manufacturing Industries**

Table 5 shows the general index of employment in manufacturing industries and the general index of pay-roll totals, by months, from January, 1923, to January, 1930, together with average indexes for each of the years 1923 to 1929 inclusive.

TABLE 5.—GENERAL INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS IN MANUFACTURING INDUSTRIES, JANUARY, 1923, TO JANUARY, 1930

[Monthly average, 1926=100]

Month	Employment									Pay-roll totals								
	1923	1924	1925	1926	1927	1928	1929	1930	1923	1924	1925	1926	1927	1928	1929	1930		
Jan.	106.6	103.8	97.9	100.4	97.3	91.6	95.2	90.2	95.8	98.6	93.9	98.0	94.9	89.6	94.5	87.6		
Feb.	108.4	105.1	99.7	101.5	99.0	93.0	97.4	-----	99.4	103.8	99.3	102.2	100.6	93.9	101.8	-----		
Mar.	110.8	104.9	100.4	102.0	99.5	93.7	98.6	-----	104.7	103.3	100.8	103.4	102.0	95.2	103.9	-----		
Apr.	110.8	102.8	100.2	101.0	98.6	93.3	99.1	-----	105.7	101.1	98.3	101.5	100.8	93.8	104.6	-----		
May	110.8	98.8	98.9	99.8	97.6	93.0	99.2	-----	109.4	96.5	98.5	99.8	99.8	94.1	104.8	-----		
June	110.9	95.6	98.0	99.3	97.0	93.1	98.8	-----	109.3	90.8	95.7	99.7	97.4	94.2	102.8	-----		
July	109.2	92.3	97.2	97.7	95.0	92.2	98.2	-----	104.3	84.3	93.5	95.2	93.0	91.2	98.2	-----		
Aug.	108.5	92.5	97.8	98.7	95.1	93.6	98.6	-----	103.7	87.2	95.4	98.7	95.0	94.2	102.1	-----		
Sept.	108.6	94.3	98.9	100.3	95.8	95.0	99.3	-----	104.4	89.8	94.4	99.3	94.1	95.4	102.6	-----		
Oct.	108.1	95.6	100.4	100.7	95.3	95.9	98.3	-----	106.8	92.4	100.4	102.9	95.2	99.0	102.3	-----		
Nov.	107.4	95.5	100.7	99.5	93.5	95.4	94.8	-----	105.4	91.4	100.4	99.6	91.6	96.1	95.1	-----		
Dec.	105.4	97.3	100.8	98.9	92.6	95.5	91.9	-----	103.2	95.7	101.6	99.8	93.2	97.7	92.0	-----		
Average	108.8	98.2	99.2	100.0	96.4	93.8	97.5	-----	104.3	94.6	97.7	100.0	96.5	94.5	100.4	-----		

Index numbers showing relatively the variation in number of persons employed and in pay-roll totals in each of the 54 manufacturing industries surveyed by the Bureau of Labor Statistics and in each of the 12 groups of industries, and also general indexes for the combined 12 groups of industries, are shown in Table 6 for January, November, and December, 1929, and for January, 1930.

In computing the general index and the group indexes the index numbers of separate industries are weighted according to the importance of the industries.

Following Table 6 is a chart which represents the 54 separate industries combined and shows the course of pay-roll totals as well as the course of employment, through each month of 1928 and 1929, and January, 1930.

TABLE 6.—INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS IN MANUFACTURING INDUSTRIES, JANUARY, NOVEMBER, AND DECEMBER, 1929, AND JANUARY, 1930

[Monthly average, 1926=100]

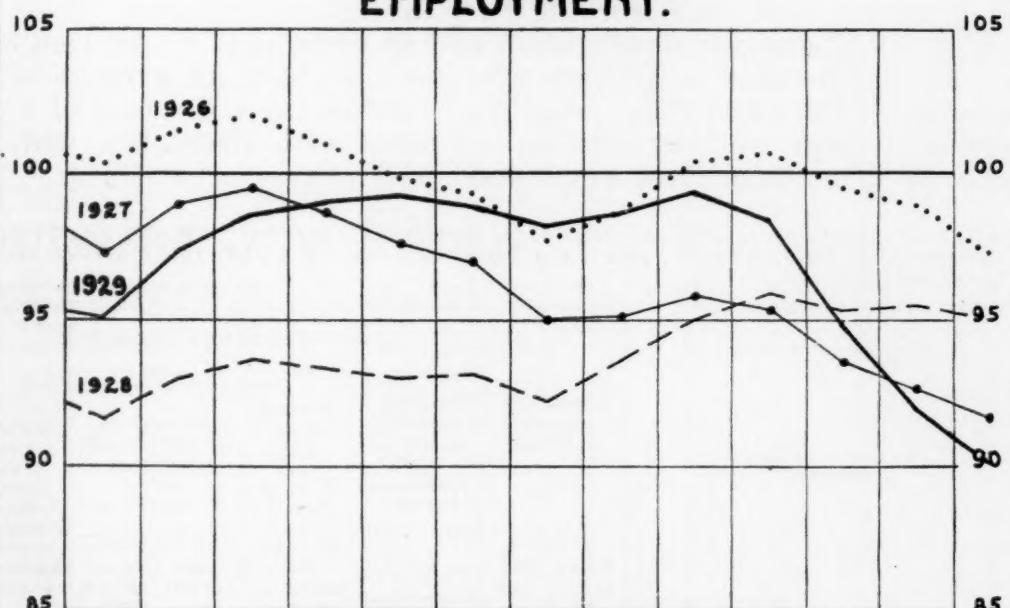
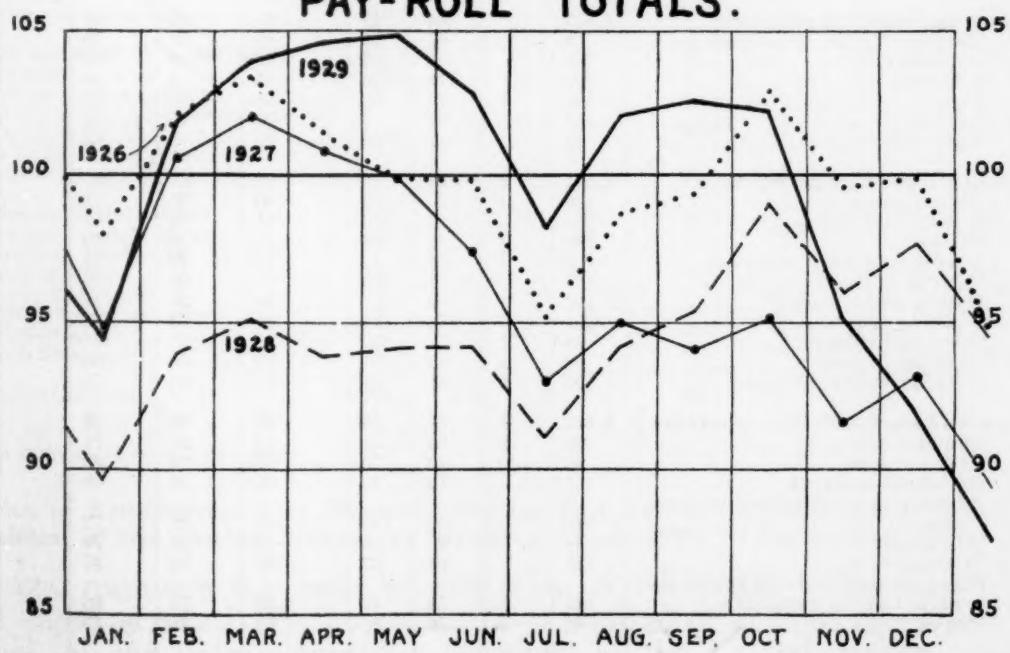
Industry	Employment						Pay-roll totals					
	1929			1930			1929			1930		
	January	November	December	January	January	November	December	January	December	January	December	January
<b>General index</b>	<b>95.2</b>	<b>94.8</b>	<b>91.9</b>	<b>90.2</b>	<b>94.5</b>	<b>95.1</b>	<b>92.0</b>	<b>87.6</b>				
<b>Food and kindred products</b>	<b>98.4</b>	<b>101.4</b>	<b>100.3</b>	<b>97.3</b>	<b>99.6</b>	<b>102.7</b>	<b>102.8</b>	<b>99.9</b>				
Slaughtering and meat packing	105.9	101.8	105.0	103.7	108.4	104.4	108.4	106.6				
Confectionery	90.9	106.1	102.5	91.7	91.9	105.4	105.7	93.3				
Ice cream	79.9	82.3	79.3	76.7	78.9	83.7	81.6	76.6				
Flour	101.1	103.5	101.8	100.2	101.5	105.4	106.0	103.3				
Baking	98.7	102.5	100.0	97.7	98.5	104.3	101.7	100.0				
Sugar refining, cane	90.4	90.8	84.2	90.6	92.8	90.5	89.5	95.0				

TABLE 6.—INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS IN MANUFACTURING INDUSTRIES, JANUARY, NOVEMBER, AND DECEMBER, 1929, AND JANUARY, 1930—Continued

Industry	Employment			Pay-roll totals			Janu- ary
	1929		1930	1929		1930	
	January	November	December	January	November	December	
<b>Textiles and their products</b>							
Cotton goods	96.9	95.8	93.5	91.9	96.3	92.6	90.7
Hosiery and knit goods	98.6	93.8	92.0	90.4	97.6	89.6	87.9
Silk goods	92.9	102.6	98.3	92.4	93.8	111.2	107.2
Woolen and worsted goods	95.2	96.7	96.1	94.2	92.8	95.5	95.2
Carpets and rugs	98.3	93.6	89.5	87.9	98.6	89.8	86.3
Dyeing and finishing textiles	107.9	108.3	104.3	101.7	102.0	106.7	95.0
Clothing, men's	102.0	100.8	99.0	99.3	104.2	96.5	94.4
Shirts and collars	89.3	90.1	88.9	88.5	86.9	78.3	81.7
Clothing, women's	91.6	94.3	94.1	90.3	86.1	94.3	92.2
Millinery and lace goods	105.6	101.1	97.9	98.6	107.4	98.1	93.4
	92.6	85.2	85.5	90.3	89.9	78.3	84.8
<b>Iron and steel and their products</b>							
Iron and steel	94.8	96.6	93.2	91.7	95.5	97.2	92.7
Cast-iron pipe	93.4	92.3	87.5	88.7	95.5	92.3	85.2
Structural ironwork	73.3	74.1	70.5	66.7	67.0	72.7	69.8
Foundry and machine-shop products	97.7	103.8	100.9	97.4	96.3	105.4	103.2
Hardware	97.6	101.2	99.3	97.3	97.7	102.5	100.2
Machine tools	92.2	88.8	87.4	87.8	93.0	88.8	88.2
Steam fittings and steam and hot-water heating apparatus	120.1	132.0	124.6	119.6	129.1	137.4	131.1
Stoves	81.2	78.5	74.0	69.6	78.4	76.5	69.6
	81.1	92.6	84.7	73.1	73.8	87.4	81.8
<b>Lumber and its products</b>							
Lumber, sawmills	85.2	86.3	81.2	76.4	81.9	87.4	81.2
Lumber, millwork	82.2	83.8	79.8	74.7	77.9	85.6	81.7
Furniture	83.3	74.5	70.4	68.9	79.1	72.3	68.6
	94.2	99.9	91.7	85.5	92.0	101.1	88.4
<b>Leather and its products</b>							
Leather	91.0	93.5	89.1	90.4	87.1	81.1	81.4
Boots and shoes	90.8	94.2	92.4	90.5	87.6	94.9	93.4
	91.0	93.3	88.3	90.4	86.9	77.2	80.3
<b>Paper and printing</b>							
Paper and pulp	99.6	103.7	103.8	102.1	103.2	108.5	109.4
Paper boxes	94.5	96.0	95.5	96.0	95.7	98.8	98.6
Printing, book and job	92.2	104.1	99.9	92.8	97.4	112.2	106.4
Printing, newspapers	100.8	104.0	106.1	104.9	103.2	106.8	109.9
	107.1	111.2	112.0	109.8	110.1	116.4	117.7
<b>Chemicals and allied products</b>							
Chemicals	94.4	100.9	98.8	98.4	95.1	104.4	103.0
Fertilizers	102.7	103.0	102.0	98.7	104.8	107.8	106.3
Petroleum refining	92.0	88.6	83.3	92.4	90.4	87.4	84.9
	86.1	102.4	100.1	100.0	86.8	104.1	102.9
<b>Stone, clay, and glass products</b>							
Cement	81.6	86.0	79.6	72.3	77.5	84.8	78.7
Brick, tile, and terra cotta	78.5	77.9	72.5	66.0	72.0	77.6	73.2
Pottery	72.7	78.5	70.1	58.9	67.6	74.6	66.0
Glass	94.3	95.3	95.4	91.8	85.2	93.8	93.3
	89.7	96.6	89.2	85.2	91.2	99.4	92.8
<b>Metal products, other than iron and steel</b>							
Stamped and enameled ware	97.2	93.4	88.7	83.7	102.4	91.1	87.4
Brass, bronze, and copper products	87.8	90.6	82.8	75.6	84.8	84.2	78.1
	101.7	94.7	91.5	87.6	109.3	93.8	91.1
<b>Tobacco products</b>							
Chewing and smoking tobacco and snuff	86.3	98.2	91.4	86.4	81.0	99.6	94.0
Cigars and cigarettes	95.1	88.2	94.6	96.1	96.8	84.3	93.0
	85.2	99.5	91.0	85.2	79.1	101.4	94.1
<b>Vehicles for land transportation</b>							
Automobiles	99.8	85.9	83.7	85.6	95.5	88.8	84.1
Carriages and wagons	121.1	85.7	81.4	87.7	111.4	82.0	70.9
Car building and repairing, electric-railroad	69.2	76.4	66.7	62.3	74.3	83.0	69.4
Car building and repairing, steam-railroad	90.5	92.7	90.6	90.5	90.6	94.5	95.8
	81.6	85.7	85.5	83.5	79.6	95.5	97.0
<b>Miscellaneous industries</b>							
Agricultural implements	102.8	108.9	106.2	105.2	101.7	107.9	108.1
Electrical machinery, apparatus, and supplies	121.3	111.2	114.4	118.1	124.1	111.1	119.3
Pianos and organs	103.4	122.3	117.8	114.9	103.8	123.8	123.2
Rubber boots and shoes	76.3	66.8	57.1	47.5	71.8	66.5	55.5
Automobile tires	99.8	99.1	100.3	94.9	96.1	103.0	104.9
Shipbuilding	108.2	82.2	79.4	81.7	103.4	72.5	70.9
	94.1	110.9	115.5	121.1	93.6	114.1	120.8

**MANUFACTURING INDUSTRIES.**  
**MONTHLY INDEXES, 1926-1929.**

MONTHLY AVERAGE 1926 = 100

**EMPLOYMENT.****PAY-ROLL TOTALS.**

**Force Employed and Time Worked in Manufacturing Industries in January, 1930**

TEN THOUSAND AND FORTY-TWO establishments in the 54 manufacturing industries reported as to force employed in January, 1930, and as to working time of employees. Thirty-one per cent of the establishments had a full normal force of employees, 67 per cent were working with reduced forces, and 2 per cent were idle; employees in 71 per cent of the establishments were working full time, and employees in 26 per cent were working part time.

The establishments in operation had an average of 87 per cent of a full normal force of employees who were working an average of 95 per cent of full time, these percentages indicating a decrease of 1 per cent in average working time as compared with December, with no decrease in average force employed.

**TABLE 7.—PROPORTION OF FULL NORMAL FORCE EMPLOYED IN MANUFACTURING INDUSTRIES IN JANUARY, 1930, AND PROPORTION OF FULL TIME WORKED BY EMPLOYEES**

Industry	Establishments reporting		Operating establishments only					
			Per cent of establishments in which employees worked—		Average per cent of full time worked by employees in establishments operating		Per cent of establishments operating with—	
	Total number	Per cent idle	Full time	Part time	Full normal force	Part normal force		
<b>Food and kindred products</b>	1,523	(1)	84	15	97	34	66	89
Slaughtering and meat packing	159	—	87	13	99	50	50	93
Confectionery	237	(1)	68	32	95	12	87	81
Ice cream	226	(1)	73	26	95	5	94	65
Flour	289	1	79	20	96	39	60	88
Baking	601	(1)	97	3	99	47	53	93
Sugar refining, cane	11	—	82	18	97	18	82	93
<b>Textiles and their products</b>	1,691	2	69	29	93	31	67	86
Cotton goods	430	1	60	39	90	26	73	85
Hosiery and knit goods	264	3	74	23	94	31	66	87
Silk goods	239	1	75	23	96	30	69	88
Woolen and worsted goods	162	4	61	35	92	22	74	81
Carpets and rugs	23	—	70	30	94	22	78	90
Dyeing and finishing	102	1	62	37	90	26	73	87
Clothing, men's	203	3	68	28	94	40	56	86
Shirts and collars	78	1	77	22	96	55	44	101
Clothing, women's	128	1	83	16	99	36	63	86
Millinery and lace goods	62	2	81	18	97	26	73	85
<b>Iron and steel and their products</b>	1,681	1	63	36	93	29	70	88
Iron and steel	166	2	63	34	92	21	77	88
Cast-iron pipe	40	3	40	58	86	10	88	67
Structural ironwork	151	—	75	25	96	32	68	93
Foundry and machine-shop products	940	(1)	65	35	94	28	72	87
Hardware	58	—	40	60	92	26	74	81
Machine tools	138	—	68	32	95	53	47	109
Steam fittings and steam and hot-water heating apparatus	104	1	53	46	92	33	66	83
Stoves	84	8	56	36	91	19	73	83
<b>Lumber and its products</b>	1,031	2	60	38	93	21	76	79
Lumber, sawmills	438	5	67	28	94	21	75	78
Lumber, millwork	266	(1)	46	53	90	15	85	77
Furniture	327	1	63	36	93	27	72	84
<b>Leather and its products</b>	373	1	72	27	95	41	58	95
Leather	116	—	82	18	97	30	70	89
Boots and shoes	257	2	67	31	94	46	53	97

<sup>1</sup> Less than one-half of 1 per cent.

TABLE 7.—PROPORTION OF FULL NORMAL FORCE EMPLOYED IN MANUFACTURING INDUSTRIES IN JANUARY, 1930, AND PROPORTION OF FULL TIME WORKED BY EMPLOYEES—Continued

Industry	Establishments reporting	Operating establishments only					
		Per cent of establishments in which employees worked—		Average per cent of full time worked by employees in establishments operating	Per cent of establishments operating with—		Average per cent of full normal force employed in establishments operating
		Total number	Per cent idle		Full time	Part time	
<b>Paper and printing</b>	<b>919</b>	<b>1</b>	<b>88</b>	<b>12</b>	<b>98</b>	<b>52</b>	<b>47</b>
Paper and pulp	154	3	76	21	96	42	55
Paper boxes	149	—	70	30	96	36	64
Printing, book and job	319	—	96	4	100	52	48
Printing, newspapers	297	—	95	5	100	66	34
<b>Chemicals and allied products</b>	<b>286</b>	<b>(1)</b>	<b>66</b>	<b>34</b>	<b>98</b>	<b>27</b>	<b>72</b>
Chemicals	109	1	42	57	98	43	56
Fertilizers	132	—	77	23	97	11	89
Petroleum refining	45	—	91	9	99	36	64
<b>Stone, clay, and glass products</b>	<b>709</b>	<b>11</b>	<b>72</b>	<b>17</b>	<b>95</b>	<b>14</b>	<b>75</b>
Cement	72	4	86	10	98	11	85
Brick, tile, and terra cotta	441	14	68	17	95	7	79
Pottery	95	5	68	26	92	43	52
Glass	101	5	84	11	98	22	73
<b>Metal products, other than iron and steel</b>	<b>188</b>	<b>—</b>	<b>70</b>	<b>30</b>	<b>95</b>	<b>24</b>	<b>76</b>
Stamped and enamel ware	61	—	75	25	96	26	74
Brass, bronze, and copper products	127	—	68	32	95	24	76
<b>Tobacco products</b>	<b>185</b>	<b>8</b>	<b>57</b>	<b>35</b>	<b>93</b>	<b>29</b>	<b>63</b>
Chewing and smoking tobacco and snuff	23	—	70	30	96	52	48
Cigars and cigarettes	162	9	56	36	92	26	65
<b>Vehicles for land transportation</b>	<b>1,081</b>	<b>(1)</b>	<b>72</b>	<b>28</b>	<b>96</b>	<b>30</b>	<b>70</b>
Automobiles	152	1	60	39	91	30	68
Carriages and wagons	41	—	37	63	92	73	27
Car building and repairing, electric-railroad	372	—	79	21	99	46	54
Car building and repairing, steam-railroad	516	—	73	27	97	14	86
<b>Miscellaneous industries</b>	<b>375</b>	<b>3</b>	<b>65</b>	<b>32</b>	<b>95</b>	<b>33</b>	<b>64</b>
Agricultural implements	72	1	65	33	96	40	58
Electrical machinery, apparatus, and supplies	139	—	68	32	95	34	66
Pianos and organs	59	12	41	47	90	14	75
Rubber boots and shoes	10	—	80	20	98	50	50
Automobile tires	33	3	61	36	92	12	85
Shipbuilding	62	5	79	16	99	50	45
<b>All industries</b>	<b>10,042</b>	<b>2</b>	<b>71</b>	<b>26</b>	<b>95</b>	<b>31</b>	<b>67</b>

<sup>1</sup> Less than one-half of 1 per cent.

**Indexes of Employment in Manufacturing Industries in Each Geographic Division of the United States, by Months, April, 1924, to December, 1929**

INDEX numbers for each month from April, 1924, to December, 1929, showing relatively the variation in number of persons employed in each of the nine geographic divisions of the United States, are shown in Table 8.

These index numbers are computed with the monthly average for 1926 as 100. No data as to employment by geographic divisions were compiled by the bureau prior to April, 1924.

TABLE 8.—INDEXES OF EMPLOYMENT IN MANUFACTURING INDUSTRIES IN EACH GEOGRAPHIC DIVISION BY MONTHS, APRIL, 1924, TO DECEMBER, 1929

[Monthly average, 1926=100]

Year and month	Geographic division <sup>1</sup>								
	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
1924									
April	104.5	103.6	101.6	103.0	97.8	100.3	102.7	102.4	102.8
May	101.0	99.2	95.8	99.9	94.2	97.1	102.0	105.9	102.8
June	98.1	96.9	89.3	98.1	92.2	94.7	98.4	107.9	100.8
July	92.2	93.2	85.8	97.7	87.4	91.3	99.4	106.0	96.9
August	92.0	93.0	86.6	96.5	87.6	92.9	100.4	106.7	96.4
September	94.9	95.1	88.0	99.0	90.2	93.8	101.4	105.8	97.2
October	97.5	97.1	89.2	98.0	91.0	97.1	103.2	99.4	98.9
November	97.9	97.3	88.3	97.7	93.2	97.8	102.3	96.8	96.6
December	101.4	98.8	91.3	99.5	94.2	99.3	102.3	93.2	93.9
Average	97.7	97.1	90.7	98.8	92.0	96.0	101.3	102.7	98.5
1925									
January	103.0	99.2	93.0	99.4	94.0	101.5	99.7	95.2	93.5
February	104.1	101.0	94.4	100.7	96.5	102.8	101.1	95.5	95.0
March	104.4	101.5	96.7	100.2	97.7	102.6	99.9	96.6	93.8
April	103.1	100.6	98.1	99.0	97.8	102.6	99.8	99.9	96.5
May	101.7	99.4	98.9	98.2	95.0	100.2	95.6	103.0	99.7
June	99.2	98.5	97.0	100.1	94.0	100.0	96.1	105.2	102.1
July	96.7	97.4	96.5	100.6	92.5	97.5	96.8	106.0	100.4
August	98.0	96.8	98.1	101.9	94.0	100.8	97.5	104.2	100.1
September	97.8	99.0	99.7	102.0	95.8	102.1	98.9	102.4	103.0
October	101.7	100.4	102.6	102.6	97.8	103.6	99.0	101.7	102.5
November	102.4	100.9	102.6	101.4	99.2	104.7	99.3	100.2	100.4
December	101.7	102.2	101.2	101.0	100.7	104.3	100.2	104.3	97.2
Average	101.2	99.7	98.2	100.6	96.3	101.9	98.7	101.2	98.7
1926									
January	102.4	101.8	101.2	99.5	99.9	102.8	98.5	99.8	95.2
February	103.8	102.3	102.7	99.7	100.8	103.4	99.2	97.1	95.3
March	104.4	102.1	103.6	99.0	102.1	102.8	98.8	95.6	96.5
April	102.2	100.9	102.1	98.9	100.4	102.6	99.4	96.1	100.3
May	100.1	99.8	100.1	98.8	98.6	100.1	99.0	99.3	103.6
June	98.4	99.2	99.9	100.1	98.1	98.6	100.5	103.1	102.5
July	93.6	97.4	98.5	99.6	97.0	98.9	100.6	100.5	102.0
August	95.4	97.6	100.3	101.2	97.7	99.8	102.2	99.7	102.3
September	99.1	99.7	100.9	102.0	100.6	98.7	101.2	103.4	101.8
October	100.6	100.5	100.1	102.5	101.5	97.5	100.9	102.8	102.1
November	100.5	99.7	96.3	100.4	101.5	97.2	100.1	102.3	100.6
December	99.5	98.9	94.1	98.2	101.4	97.2	99.8	100.4	97.8
Average	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1927									
January	98.6	96.8	93.1	96.3	100.6	94.9	97.9	97.5	94.1
February	99.8	97.8	97.4	96.8	102.1	95.9	98.6	94.2	94.3
March	99.4	97.8	99.0	96.6	102.9	95.4	97.4	93.0	97.0
April	98.0	96.1	99.1	96.5	103.1	94.7	96.3	94.3	98.2
May	96.8	94.6	98.9	97.3	101.5	93.3	94.8	97.3	99.9
June	95.3	94.0	97.7	99.5	100.9	93.0	94.9	99.0	101.7
July	94.0	92.5	94.4	98.6	99.8	91.2	93.1	100.7	100.7
August	93.4	92.5	95.7	98.9	99.3	92.4	93.9	99.3	101.0
September	95.5	93.6	94.5	98.9	101.8	92.6	95.3	98.2	100.7
October	95.2	93.4	93.8	98.2	101.5	93.2	93.6	96.6	100.3
November	93.8	91.8	90.7	94.9	100.8	91.9	92.2	97.5	97.7
December	92.0	90.6	91.5	93.3	99.9	92.0	90.8	93.4	94.6
Average	96.0	94.3	95.5	97.2	101.2	93.4	94.9	96.8	98.4

<sup>1</sup> See footnotes 3 to 11, p. 149.

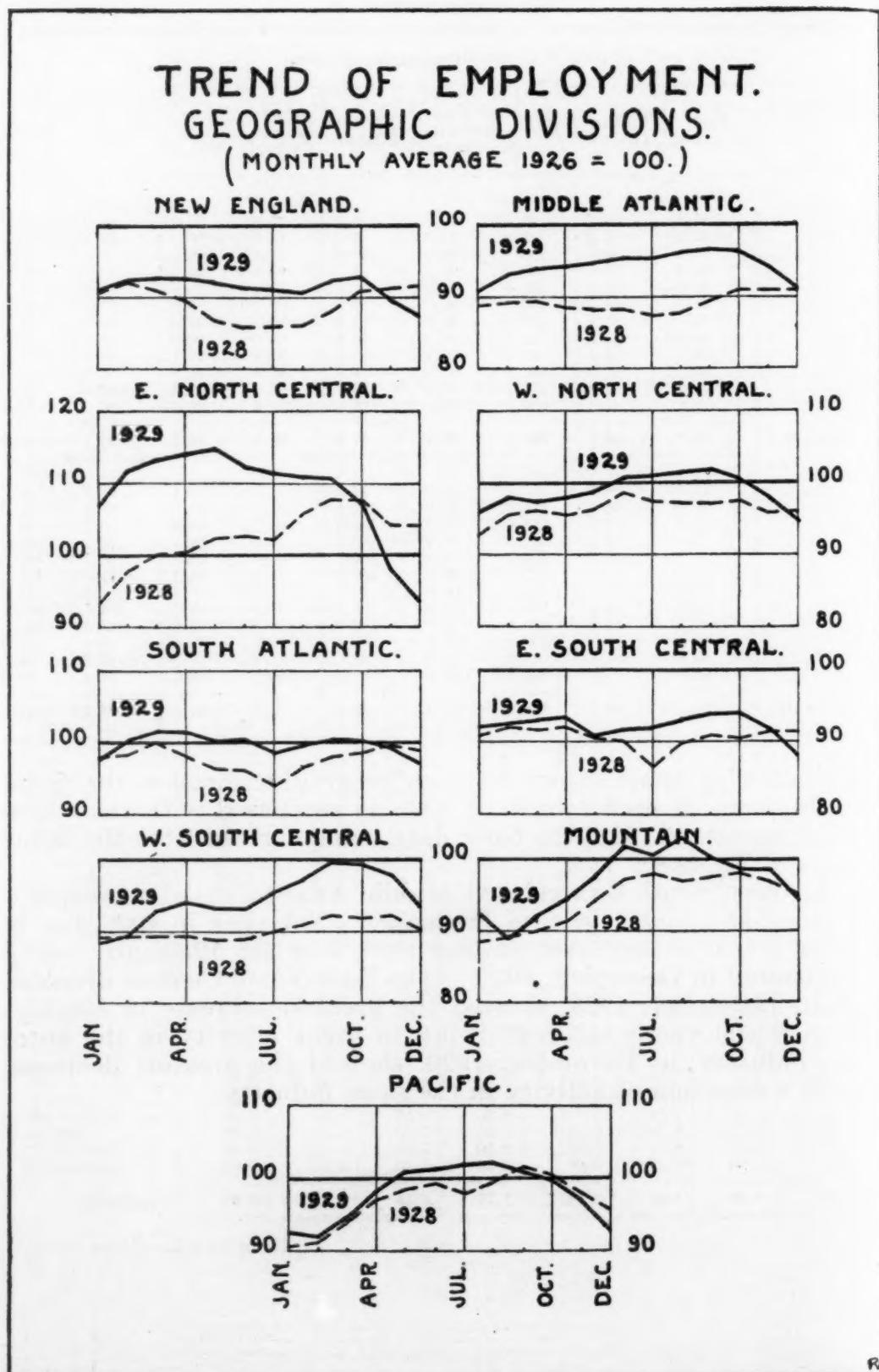
TABLE 8.—INDEXES OF EMPLOYMENT IN MANUFACTURING INDUSTRIES IN EACH GEOGRAPHIC DIVISION BY MONTHS, APRIL, 1924, TO DECEMBER, 1929—Continued

[Monthly average, 1926 = 100]

Year and month	Geographic division								
	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
<b>1928</b>									
January	91.4	88.7	93.3	92.6	98.2	90.9	89.2	88.5	90.4
February	92.1	89.2	97.8	95.5	98.5	92.0	89.4	89.2	91.1
March	90.9	89.4	100.1	96.0	100.0	91.8	89.6	90.0	93.8
April	89.4	88.4	100.4	95.5	98.4	92.0	89.3	91.2	97.1
May	86.8	88.2	102.4	96.2	96.6	90.4	88.8	94.1	98.6
June	85.8	88.3	102.7	98.7	96.5	90.0	89.0	97.2	99.3
July	85.8	87.4	102.1	97.4	94.2	86.8	90.0	97.9	97.8
August	86.0	87.9	105.8	97.2	96.8	89.9	90.9	97.0	99.7
September	88.0	89.4	107.5	97.1	98.2	90.8	92.1	97.6	101.5
October	90.7	91.0	107.5	97.6	98.7	90.3	91.9	98.0	100.4
November	91.3	91.1	104.1	95.9	99.7	91.3	92.3	97.0	97.9
December	91.6	91.1	104.2	96.1	99.0	91.3	90.2	95.3	95.5
<b>Average</b>	<b>89.2</b>	<b>89.2</b>	<b>102.3</b>	<b>96.3</b>	<b>97.9</b>	<b>90.6</b>	<b>90.2</b>	<b>94.4</b>	<b>96.9</b>
<b>1929</b>									
January	91.1	90.9	107.0	95.9	98.0	92.1	88.4	92.6	92.7
February	92.2	93.1	111.8	97.9	100.1	92.3	89.6	89.0	92.0
March	92.8	94.0	113.4	97.3	101.6	93.1	93.0	92.2	94.3
April	92.6	94.2	114.2	97.9	101.5	93.5	94.1	94.3	98.2
May	92.2	94.7	114.9	98.9	100.2	90.7	93.3	97.7	100.9
June	91.3	95.3	112.3	100.6	100.3	91.8	93.2	101.7	101.2
July	91.0	95.4	111.2	100.6	98.8	92.0	95.7	100.5	101.8
August	90.8	96.0	110.9	101.4	99.9	93.3	97.3	103.1	102.2
September	92.5	96.5	110.7	101.9	100.2	93.9	99.8	100.3	100.8
October	92.8	96.3	107.0	100.7	100.2	94.0	99.6	98.5	99.9
November	89.8	94.2	98.0	98.0	99.4	91.9	97.8	98.6	96.9
December	87.2	91.3	93.8	94.8	97.2	88.1	93.4	94.4	92.8
<b>Average</b>	<b>91.4</b>	<b>94.3</b>	<b>108.8</b>	<b>98.8</b>	<b>99.8</b>	<b>92.2</b>	<b>94.6</b>	<b>96.9</b>	<b>97.8</b>

The following chart shows for each geographic division the trend of employment in each month of 1929 as compared with the corresponding month of 1928, the basic data being derived from the index numbers of Table 8.

In the West South Central and Middle Atlantic divisions employment stood at a higher level in December, 1929, than in 1928, but in all other divisions decreased employment over the 12-month period was registered in December, 1929. The East North Central division, which in December, 1928, showed the greatest increase in employment over the year's interval owing to great activity in the automobile industry, in December, 1929, showed the greatest decrease, owing to a cessation of activity in the same industry.



**Trend of Employment and Pay-Roll Totals in Cotton-Goods Mills, by Districts, January, 1923, to December, 1929**

THE trend of employment and the trend of pay-roll totals in the three principal cotton-manufacturing districts of the United States—New England, Middle Atlantic, and Southern—are shown in Table 9 and the accompanying chart.

The information collected is presented in the form of index numbers which show relatively the movement of employment and pay-roll totals, from month to month, from January, 1923, to December, 1929. In computing these index numbers the monthly average for 1926 is used as the base or 100. The data for 84 months are linked together by means of a chain index, the per cents of change from month to month being obtained by comparing reports from identical establishments for each two consecutive months. The number of establishments reporting has varied from month to month, and the average number in 1929 is considerably greater than in 1923, but even in the earlier year so large a number of employees was represented in each district as to render the information representative of the industry as a whole in the respective districts.

In December, 1929, the representation from each district was as follows: New England, 105 establishments, 60,720 employees, and \$1,106,441 pay-roll total; Middle Atlantic, 21 establishments, 9,918 employees, and \$202,093 pay-roll total; Southern, 327 establishments, 124,413 employees, and \$1,632,602 pay-roll total.

The range of employment has been greatest in the Middle Atlantic States, the index standing at 181.3 for February, 1923, and at 59.1 for August, 1925; for December, 1929, the index is 80.0. The New England States' employment index has ranged from 137.1 for March, 1923, to 74.9 for August, 1928; for December, 1929, the index is 80.8. The Southern States' employment index has ranged from 109.7 for December, 1927, to 85.0 for July, 1924; for December, 1929, the index is 100.9.

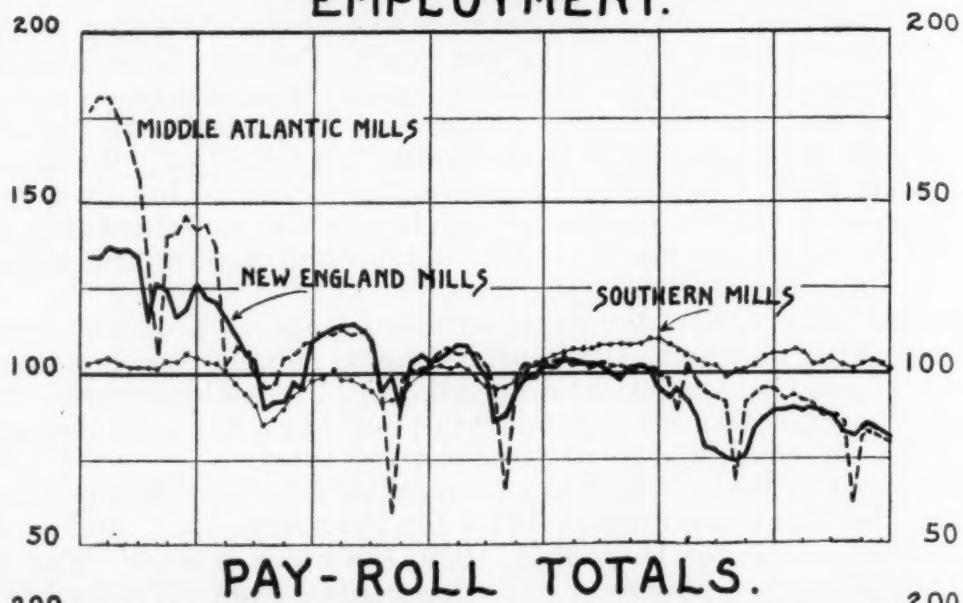
The monthly average employment index for 1929 was slightly higher than the average index for 1928 in the New England district, and about 8 per cent lower in the Middle Atlantic district, while in the Southern States the 1929 average and 1928 average indexes were practically identical.

The average monthly employment indexes, in both the New England and Middle Atlantic districts, were very much higher in 1923, and considerably higher in 1924, 1925, and 1927, than in 1926, the base year, but in both districts the averages for the years 1928 and 1929 were decidedly lower than in 1926. In the Southern district, however, while the averages for 1923 and 1927 were higher than that for 1926, the base year, the averages in 1924 and 1925 were lower than in 1926, and the averages in 1928 and 1929, instead of being decidedly lower than in 1926, were both over 3 per cent higher.

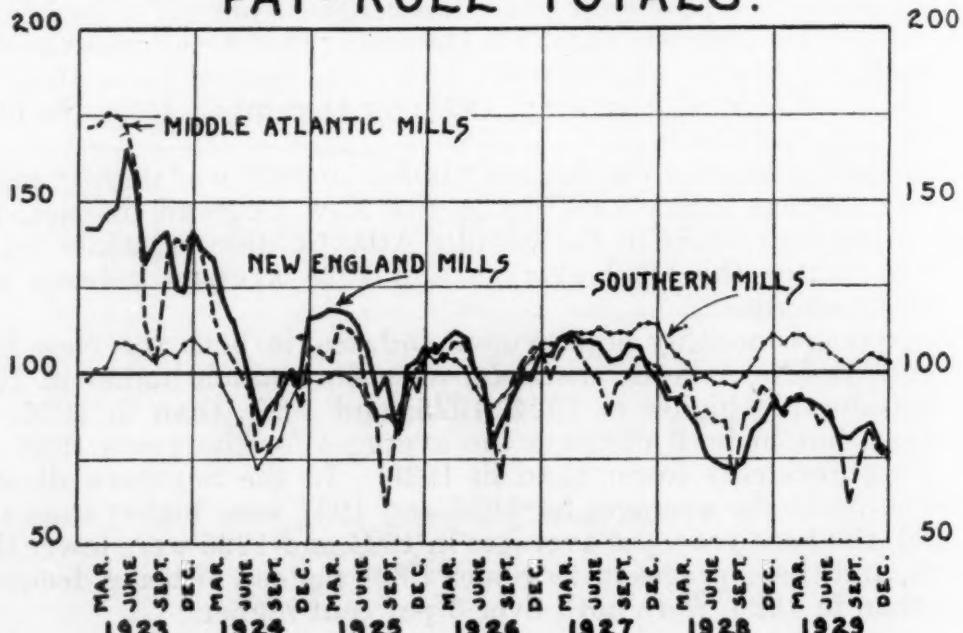
TREND OF EMPLOYMENT & PAY-ROLL TOTALS  
IN COTTON-GOODS MILLS.

(MONTHLY AVERAGE 1926 = 100.)

EMPLOYMENT.



PAY-ROLL TOTALS.



INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS IN COTTON GOODS MILLS,  
BY DISTRICTS

[Monthly average, 1926=100]

NEW ENGLAND STATES: Connecticut, Maine, Massachusetts, New Hampshire, Rhode  
Island, and Vermont

Month	Employment							Pay-roll totals						
	1923	1924	1925	1926	1927	1928	1929	1923	1924	1925	1926	1927	1928	1929
January	134.3	121.9	111.8	104.5	101.7	94.3	89.6	143.2	136.3	117.1	106.5	105.5	92.6	89.3
February	134.1	121.0	113.2	106.4	104.0	95.1	90.0	142.8	133.7	118.3	109.1	110.0	92.5	91.9
March	137.1	117.1	114.0	108.1	104.2	92.3	89.8	146.7	124.0	118.2	112.2	111.8	88.6	92.6
April	136.0	110.4	114.7	108.0	103.2	89.6	90.2	148.5	115.9	117.6	110.1	109.0	85.6	92.0
May	136.4	105.7	112.5	103.2	102.7	78.5	89.6	165.3	108.4	114.5	100.7	109.5	76.1	90.3
June	134.4	103.9	109.5	99.5	102.3	77.4	87.8	158.3	98.0	106.8	97.9	108.3	74.4	87.0
July	115.9	90.1	95.9	85.5	100.8	75.6	83.2	132.1	85.2	94.9	79.4	104.8	72.7	81.3
August	126.7	92.0	99.6	87.9	98.7	74.9	82.0	137.4	89.6	98.7	85.5	104.4	71.6	81.1
September	125.1	92.5	91.0	95.1	101.4	75.7	83.6	141.0	94.0	83.1	94.0	107.7	74.4	83.7
October	117.1	98.5	103.3	99.9	102.3	83.5	84.6	125.2	100.4	102.1	99.4	107.7	83.5	85.4
November	119.2	96.3	105.5	99.6	100.9	86.8	82.9	124.5	96.7	103.6	99.1	101.6	85.6	77.2
December	126.3	109.3	103.5	101.8	95.9	89.2	80.8	141.7	116.5	107.0	105.4	98.9	91.2	75.2
Average	128.5	104.9	106.2	100.0	101.5	84.4	86.2	142.2	108.3	106.8	100.0	106.5	82.4	85.6

## MIDDLE ATLANTIC STATES: New Jersey, New York, and Pennsylvania

January	177.5	144.1	112.3	105.1	102.6	98.8	93.3	171.3	136.3	106.7	107.8	98.5	95.7	88.8
February	181.3	137.4	111.6	107.2	104.1	89.6	94.0	173.3	117.9	103.3	103.4	106.9	91.3	92.8
March	181.0	102.3	113.5	106.0	103.7	102.5	92.5	176.1	108.8	113.6	109.1	110.7	97.6	93.0
April	176.1	108.6	111.8	106.6	104.4	98.0	91.8	174.9	103.9	112.8	109.7	106.3	87.5	91.2
May	169.7	106.7	112.4	105.5	101.8	94.3	89.2	171.5	100.0	109.7	101.5	100.6	88.7	85.4
June	158.5	102.9	108.9	102.3	102.9	93.3	87.9	156.1	96.4	94.2	97.2	98.4	86.1	88.3
July	117.2	96.6	95.7	95.9	101.5	91.6	85.9	114.6	77.6	89.7	86.6	87.6	86.0	79.0
August	105.8	97.9	59.1	66.5	101.2	68.0	61.9	102.2	79.6	61.0	69.9	96.4	67.5	61.6
September	140.6	104.4	98.9	99.2	102.0	91.7	81.8	134.3	99.4	89.7	98.2	99.3	87.9	74.7
October	141.3	106.1	100.2	102.1	101.2	94.2	82.7	139.3	99.7	99.6	102.4	104.5	89.1	83.8
November	146.2	108.3	100.3	101.8	101.1	95.7	82.1	136.7	90.3	95.1	107.0	102.2	95.4	79.9
December	142.3	109.6	103.1	102.1	99.5	95.4	80.0	140.6	108.8	107.3	106.7	102.1	92.4	76.3
Average	153.1	110.4	102.3	100.0	102.1	92.8	85.3	149.3	101.5	98.5	100.0	101.2	88.8	82.9

## SOUTHERN STATES: Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia, Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma, and Texas

January	102.9	103.1	99.4	102.4	105.1	108.4	105.8	98.8	106.7	97.9	104.6	107.7	108.2	108.7
February	104.2	103.3	100.5	101.3	105.9	106.8	106.4	100.6	105.3	99.5	105.2	110.0	105.2	111.5
March	104.8	100.7	98.8	102.2	106.9	105.0	105.7	101.6	96.4	99.9	103.7	111.3	102.6	110.3
April	103.2	97.5	98.6	100.2	107.2	102.8	102.2	108.9	91.9	98.4	101.9	111.8	98.4	108.2
May	102.9	94.3	96.8	98.9	107.0	102.3	103.1	108.9	85.1	96.4	95.6	111.3	99.6	108.2
June	102.3	91.1	95.7	97.1	108.0	101.8	104.3	107.7	79.8	91.7	92.6	112.4	97.6	105.8
July	102.1	85.0	91.7	95.8	108.3	99.9	101.8	106.2	72.3	87.4	90.2	111.4	97.4	104.0
August	101.7	87.2	92.5	96.9	108.5	100.4	101.3	104.4	78.0	87.6	93.6	112.0	96.9	101.0
September	103.6	90.2	93.3	98.8	108.3	100.9	102.5	106.4	80.6	84.6	98.2	111.7	99.3	102.7
October	103.9	94.1	97.5	100.2	108.7	102.1	103.0	105.0	90.2	94.5	101.8	114.1	104.2	106.1
November	105.9	95.9	100.2	102.2	109.6	104.8	102.4	107.2	92.2	100.4	104.5	114.5	108.1	105.0
December	104.6	98.0	102.9	103.7	109.7	105.5	100.9	109.4	98.1	105.0	108.1	114.9	111.1	104.2
Average	103.5	95.0	97.3	100.0	107.8	103.4	103.3	105.4	89.7	95.3	100.0	111.9	102.4	100.3

## 2. Employment in Coal Mining in January, 1930

EMPLOYMENT in coal mining—anthracite and bituminous combined—showed a decrease of 1.0 per cent in January as compared with December, while pay-roll totals decreased 13.9 per cent. The pronounced decrease in earnings in January was due to the observance of holidays, some church celebrations, and market conditions during the period covered by the pay rolls reported.

The 1,449 mines reported had in January 333,081 employees whose earnings in one week were \$9,069,079.

**Anthracite**

IN ANTHRACITE mining in January there was a decrease of 4.7 per cent in employment and a decrease of 22.9 per cent in pay-roll totals.

All anthracite mines reported are in Pennsylvania—the Middle Atlantic geographic division. The details for December and January are shown in Table 1.

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL ANTHRACITE MINES IN DECEMBER, 1929, AND JANUARY, 1930

Geographic division	Mines	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
		162	121,391		115,710	\$4,785,556	\$3,690,494
Middle Atlantic <sup>1</sup>				-4.7			-22.9

<sup>1</sup> See footnote 4 p. 149.

**Bituminous Coal**

EMPLOYMENT in bituminous coal mining increased 1.1 per cent in January as compared with December, while pay-roll totals decreased 6.3 per cent, as shown by reports from 1,287 mines in which there were in January 217,371 employees whose combined earnings in one week were \$5,378,585.

Substantial increases in employment were shown in each geographic division for which bituminous mining is reported except the East North Central but decreases in earnings were reported in every division.

Details for each geographic division except the New England division, for which no coal mining is reported, are shown in Table 2

TABLE 2.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL BITUMINOUS COAL MINES IN DECEMBER, 1929, AND JANUARY, 1930

Geographic division <sup>1</sup>	Mines	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
		400	62,884		63,690	\$1,622,358	\$1,502,134
Middle Atlantic	400	62,884	63,690	+1.3	\$1,622,358	\$1,502,134	-7.4
East North Central	166	31,046	30,921	-0.4	915,445	815,387	-10.9
West North Central	57	6,166	6,427	+4.2	171,113	161,122	-5.8
South Atlantic	306	50,590	50,878	+0.6	1,322,051	1,241,568	-6.1
East South Central	206	42,875	43,320	+1.0	946,848	936,681	-1.1
West South Central	33	2,941	3,047	+3.6	82,185	81,284	-1.1
Mountain	110	17,023	17,645	+3.7	628,220	590,779	-6.0
Pacific	9	1,422	1,443	+1.5	54,315	49,630	-8.6
All divisions	1,287	214,947	217,371	+1.1	5,742,535	5,378,585	-6.3

<sup>1</sup> See footnotes 4 to 11, p. 149.

**3. Employment in Metalliferous Mining in January, 1930**

METALLIFEROUS mines in January showed a decrease in employment of 2.8 per cent, while pay-roll totals decreased 7.0 per cent. The 350 mines covered had in January 59,837 employees whose combined earnings in one week were \$1,745,910.

Details for each geographic division from which metalliferous mining is reported are shown in the following table:

**COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL METALLIFEROUS MINES IN DECEMBER, 1929, AND JANUARY, 1930**

Geographic division <sup>1</sup>	Mines	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
Middle Atlantic.....	6	967	1,001	+3.5	\$27,925	\$27,678	-0.9
East North Central.....	49	13,579	13,197	-2.8	370,391	333,042	-10.1
West North Central.....	58	7,566	7,137	-5.7	217,627	198,532	-8.8
East South Central.....	9	3,393	3,327	-1.9	81,635	72,921	-10.7
West South Central.....	61	3,126	2,940	-6.0	78,221	68,247	-12.8
Mountain.....	143	30,493	29,811	-2.2	1,021,499	968,960	-5.1
Pacific.....	24	2,422	2,424	+ <sup>(2)</sup>	79,035	76,530	-3.2
All divisions.....	350	61,546	59,837	-2.8	1,876,333	1,745,910	-7.0

<sup>1</sup> See footnotes 4 to 11, p. 149.

<sup>2</sup> Less than one-tenth of 1 per cent.

#### 4. Employment in Quarrying and Nonmetallic Mining in January, 1930

EMPLOYMENT and pay-roll totals in this industrial group as a whole decreased 11.7 per cent and 15.8 per cent, respectively, in January as compared with December. The 586 establishments covered reported 27,591 employees whose combined earnings in one week were \$645,047.

Details for each geographic division are shown in the following table:

**COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL QUARRIES AND NONMETALLIC MINES IN DECEMBER, 1929, AND JANUARY, 1930**

Geographic division <sup>1</sup>	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
New England.....	88	4,461	4,024	-9.8	\$123,772	\$116,978	-5.5
Middle Atlantic.....	80	5,535	4,688	-15.3	150,447	115,170	-23.4
East North Central.....	186	8,353	7,301	-12.6	234,567	189,911	-19.4
West North Central.....	41	2,169	1,858	-14.3	55,051	47,266	-14.1
South Atlantic.....	90	5,838	5,377	-7.9	103,494	95,601	-7.6
East South Central.....	46	2,264	1,968	-13.1	35,715	30,300	-15.2
West South Central.....	28	1,458	1,318	-9.6	30,599	25,871	-15.5
Mountain.....	4	44	32	-27.3	1,038	854	-17.7
Pacific.....	23	1,136	1,025	-9.8	31,212	23,996	-23.1
All divisions.....	586	31,258	27,591	-11.7	765,895	645,047	-15.8

<sup>1</sup> See footnotes 3 to 11, p. 149.

#### 5. Employment in Public Utilities in January, 1930

PUBLIC utility companies reported a decrease of 1.4 per cent in employment in January as compared with December and decreased pay-roll totals of 2.1 per cent. The 9,657 establishments reporting had in January 711,996 employees, whose combined earnings in one week were \$21,308,263.

Details for each geographic division are shown in the following table:

**COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL PUBLIC UTILITIES ESTABLISHMENTS IN DECEMBER, 1929, AND JANUARY, 1930**

Geographic division <sup>1</sup>	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
New England.....	396	41,791	41,164	-1.5	\$1,393,501	\$1,381,315	-0.9
Middle Atlantic.....	1,533	214,130	212,582	-0.7	6,824,125	6,740,019	-1.2
East North Central.....	1,702	189,853	186,286	-1.9	5,858,765	5,695,439	-2.8
West North Central.....	1,601	75,656	73,981	-2.2	2,122,498	2,026,289	-4.5
South Atlantic.....	818	53,876	53,572	-0.6	1,517,865	1,506,160	-0.8
East South Central.....	749	21,928	21,394	-2.4	521,523	509,627	-2.3
West South Central.....	1,064	42,360	42,268	-0.2	1,054,415	1,015,771	-3.7
Mountain.....	581	16,994	16,371	-3.7	477,232	450,087	-5.7
Pacific.....	1,213	65,193	64,378	-1.3	2,003,088	1,983,916	-1.0
All divisions.....	8,657	721,781	711,996	-1.4	21,773,912	21,306,623	-2.1

<sup>1</sup> See footnotes 3 to 11, p. 149.

## 6. Employment in Wholesale and Retail Trade in January, 1930

EMPLOYMENT in 8,295 establishments—wholesale and retail trade combined—showed a drop of 18.3 per cent in January as compared with December, and a drop of 14.5 per cent in pay-roll totals. These establishments had in January 289,855 employees whose combined earnings in one week were \$7,353,547.

### Wholesale Trade

EMPLOYMENT in wholesale trade alone decreased 2.5 per cent in January as compared with December, while pay-roll totals decreased 4.5 per cent. The 1,757 establishments reporting had in January 59,052 employees and pay-roll totals of \$1,802,907.

Details for each geographic division are shown in Table 1.

**TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL WHOLESALE TRADE ESTABLISHMENTS IN DECEMBER, 1929, AND JANUARY, 1930**

Geographic division <sup>1</sup>	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
New England.....	155	3,404	3,297	-3.1	\$93,678	\$92,207	-1.6
Middle Atlantic.....	329	9,084	8,710	-4.1	285,478	273,630	-4.2
East North Central.....	253	12,569	12,539	-0.2	393,428	378,912	-3.7
West North Central.....	221	12,840	12,484	-2.8	378,218	357,332	-5.5
South Atlantic.....	171	3,614	3,516	-2.7	107,370	104,401	-2.8
East South Central.....	59	1,780	1,734	-2.6	52,471	51,103	-2.6
West South Central.....	222	5,340	5,183	-2.9	158,194	152,107	-3.8
Mountain.....	64	1,641	1,643	+0.1	58,581	55,885	-4.6
Pacific.....	283	10,299	9,946	-3.4	360,414	337,330	-6.4
All divisions.....	1,757	59,051	59,052	-2.5	1,887,832	1,802,907	-4.5

<sup>1</sup> See footnotes 3 to 11, p. 149.

**Retail Trade**

EMPLOYMENT in retail trade in January decreased 21.6 per cent owing to the dropping of employees taken on for the December holiday business, while pay-roll totals decreased 17.3 per cent.

The 6,538 establishments from which reports were received had in January 230,803 employees whose earnings in one week were \$5,550,640.

Details by geographic divisions are shown in Table 2.

TABLE 2.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL RETAIL TRADE ESTABLISHMENTS IN DECEMBER, 1929, AND JANUARY, 1930

Geographic division <sup>1</sup>	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
New England.....	81	17,002	12,802	-24.7	\$372,483	\$305,697	-17.9
Middle Atlantic.....	326	59,372	46,675	-21.4	1,492,072	1,199,792	-19.6
East North Central.....	2,364	91,738	72,251	-21.2	2,201,486	1,823,083	-17.2
West North Central.....	666	25,557	20,334	-20.4	515,198	438,512	-14.9
South Atlantic.....	943	25,265	19,534	-22.7	533,537	440,771	-17.4
East South Central.....	358	8,029	6,310	-21.4	144,905	126,177	-12.9
West South Central.....	200	10,234	8,563	-16.3	193,702	171,632	-11.4
Mountain.....	73	4,394	3,454	-21.4	80,773	69,815	-13.6
Pacific.....	1,527	52,723	40,880	-22.5	1,180,282	975,161	-17.4
All divisions.....	6,538	294,314	230,803	-21.6	6,714,438	5,550,640	-17.3

<sup>1</sup> See footnotes 3 to 11, p. 149.

**7. Employment in Hotels in January, 1930**

EMPLOYMENT in hotels increased 2.8 per cent in January as compared with December and pay-roll totals increased 1.4 per cent. The South Atlantic division reported increased employment of 26.8 per cent, with a corresponding increase in pay-roll totals, owing to the opening of southern resort hotels.

Per capita earnings, obtained by dividing the total number of employees into the total amount of pay roll, should not be interpreted as being the entire earnings of hotel employees. The pay-roll totals here reported are cash payments only, with no regard to the value of board or room furnished employees, and of course no satisfactory estimate can be made of additional recompense in the way of tips. The additions to the money wages granted vary greatly, not only among localities but among hotels in one locality and among employees in one hotel. Some employees are furnished board and room, others are given board only for one, two, or three meals, while the division of tips is made in many ways.

Per capita earnings are further reduced by the considerable amount of part-time employment in hotels caused by conventions and banquets or other functions.

The details for each geographic division are shown in the table following.

**COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL HOTELS  
IN DECEMBER, 1929, AND JANUARY, 1930**

Geographic division <sup>1</sup>	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
New England.....	107	9,353	8,822	-5.7	\$151,679	\$149,367	-1.5
Middle Atlantic.....	326	46,872	47,510	+1.4	855,390	855,724	+(.7)
East North Central.....	344	32,626	32,520	-0.3	581,667	579,174	-0.4
West North Central.....	203	13,334	13,731	+3.0	202,065	200,591	-0.7
South Atlantic.....	209	13,367	16,955	+26.8	202,919	250,805	+23.6
East South Central.....	70	6,160	6,088	-1.2	80,253	76,967	-4.1
West South Central.....	101	8,182	8,357	+2.1	109,909	111,732	+1.7
Mountain.....	95	3,748	3,858	+2.9	65,826	63,733	-3.2
Pacific.....	341	17,307	17,368	+0.4	337,127	336,060	-0.3
All divisions.....	1,796	150,949	155,209	+2.8	2,586,835	2,624,153	+1.4

<sup>1</sup> See footnotes 3 to 11, p. 149.

<sup>2</sup> Less than one-tenth of 1 per cent.

### 8. Employment in Canning and Preserving in January, 1930

THE usual midwinter decrease in the canning and preserving industry was shown in January by a decrease of 24.8 per cent in employment, each geographic division reporting a large decrease.

Reports were received from 403 establishments having in January 17,947 employees with pay-roll totals of \$345,749.

The details for each geographic division are shown in the table following.

**COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL CANNING  
AND PRESERVING ESTABLISHMENTS IN DECEMBER, 1929, AND JANUARY, 1930**

Geographic division <sup>1</sup>	Establishments	Number on pay roll		Per cent of change	Amount of pay roll (1 week)		Per cent of change
		December, 1929	January, 1930		December, 1929	January, 1930	
New England.....	17	956	890	-6.9	\$16,825	\$18,193	+8.1
Middle Atlantic.....	62	7,826	6,500	-16.9	164,446	140,616	-14.5
East North Central.....	107	3,310	2,884	-12.9	62,904	56,371	-10.4
West North Central.....	19	487	425	-12.7	9,781	8,019	-18.0
South Atlantic.....	27	1,633	1,147	-29.8	14,793	11,636	-21.3
East South Central.....	14	558	517	-7.3	6,702	6,305	-5.9
West South Central.....	9	242	214	-11.6	3,500	3,096	-11.5
Mountain.....	16	742	318	-57.1	12,694	7,028	-44.6
Pacific.....	132	8,108	5,052	-37.7	144,258	94,485	-34.5
All divisions.....	463	23,862	17,947	-24.8	435,903	345,749	-20.7

<sup>1</sup> See footnotes 3 to 11, p. 149.

### Employment on Class I Steam Railroads in the United States

THE monthly trend of employment from January, 1923, to December, 1929, on Class I railroads—that is, all roads having operating revenues of \$1,000,000 or over—is shown by the index numbers published in Table 1. These index numbers are constructed from monthly reports of the Interstate Commerce Commission, using the monthly average for 1926 as 100.

TABLE 1.—INDEX OF EMPLOYMENT ON CLASS I STEAM RAILROADS IN THE UNITED STATES, JANUARY, 1923, TO DECEMBER, 1929

[Monthly average, 1926=100]

Month	1923	1924	1925	1926	1927	1928	1929
January	98.3	96.9	95.6	95.8	95.5	89.3	88.2
February	98.6	97.0	95.4	96.0	95.3	89.0	88.9
March	100.5	97.4	95.2	96.7	95.8	89.9	90.1
April	102.0	98.9	96.6	98.9	97.4	91.7	92.2
May	105.0	99.2	97.8	100.2	99.4	94.5	94.9
June	107.1	98.0	98.6	101.6	100.9	95.9	96.1
July	108.2	98.1	99.4	102.9	101.0	95.6	96.6
August	109.4	99.0	99.7	102.7	99.5	95.7	97.4
September	107.8	99.7	99.9	102.8	99.1	95.3	96.8
October	107.3	100.8	100.7	103.4	98.9	95.3	96.9
November	105.2	99.0	99.1	101.2	95.7	92.9	93.0
December	99.4	96.0	97.1	98.2	91.9	89.7	88.8
Average	104.1	98.3	97.9	100.0	97.5	92.9	93.3

Table 2 shows the total number of employees on the 15th day each of December, 1928, and November and December, 1929, and pay-roll totals for the entire months.

TABLE 2.—EMPLOYMENT AND EARNINGS OF RAILROAD EMPLOYEES—DECEMBER, 1928, AND NOVEMBER AND DECEMBER, 1929

[From monthly reports of Interstate Commerce Commission. As data for only the more important occupations are shown separately, the group totals are not the sum of the items under the respective groups]

Occupation	Number of employees at middle of month			Total earnings		
	Decem- ber, 1928	Novem- ber, 1929	Decem- ber, 1929	December, 1928	November, 1929	Decem- ber, 1929
<b>Professional, clerical, and general.</b>						
Clerks	268,972	271,833	269,014	\$38,909,010	\$39,636,962	\$39,426,388
Stenographers and typists	153,455	153,942	151,528	21,021,276	21,230,437	20,996,901
24,621	24,864	24,745	3,170,174	3,236,803	3,234,631	
<b>Maintenance of way and structures.</b>	350,412	400,689	351,390	31,940,795	37,052,448	33,747,870
Laborers, extra gang and work train	45,563	64,437	47,259	3,200,959	4,723,631	3,430,438
Laborers, track and roadway section	177,235	198,321	173,857	12,232,334	13,889,279	12,663,772
<b>Maintenance of equipment and stores.</b>	456,344	456,271	447,254	59,795,225	62,688,174	60,953,184
Carmen	99,530	100,443	97,043	14,649,997	15,747,021	14,929,995
Machinists	54,896	54,532	53,843	8,622,410	9,083,188	8,880,948
Skilled trades helpers	100,432	101,580	99,308	11,140,188	12,011,683	11,602,924
Laborers (shops, engine houses, power plants and stores)	37,369	37,269	37,027	3,583,277	3,572,771	3,660,367
Common laborers (shops, engine houses, power plants, and stores)	52,338	52,350	50,770	4,122,197	4,204,204	4,052,673
<b>Transportation, other than train, engine, and yard.</b>	194,953	195,597	191,514	24,642,133	24,491,163	24,390,747
Station agents	29,541	29,106	29,118	4,701,504	4,632,357	4,671,454
Telegraphers, telephoners, and tormen	23,066	23,143	22,859	3,629,389	3,554,501	3,627,813
Truckers (stations, warehouses, and platforms)	34,432	34,748	32,535	3,229,515	3,277,155	3,028,581
Crossing and bridge flagmen and gatemen	20,860	20,380	20,259	1,596,472	1,574,541	1,574,613
<b>Transportation (yard masters, switch tenders, and hostlers).</b>	21,834	21,765	21,535	4,343,190	4,279,696	4,317,886
<b>Transportation, train and engine.</b>	312,523	317,868	307,380	63,468,253	64,592,904	63,162,970
Road conductors	35,202	35,435	34,507	8,361,525	8,518,187	8,353,296
Road brakemen and flagmen	69,753	70,035	67,646	12,008,755	12,292,893	11,842,626
Yard brakemen, and yard helpers	52,782	54,787	52,272	9,488,557	9,717,161	9,379,942
Road engineers and motormen	41,660	42,170	41,202	11,314,661	11,467,077	11,306,172
Road firemen and helpers	42,650	42,483	41,919	8,359,485	8,421,864	8,309,157
All employees	1,665,038	1,664,023	1,588,076	223,995,006	232,741,287	225,999,045

### Changes in Employment and Pay Rolls in Various States

THE following data as to changes in employment and pay rolls have been compiled from reports received from the various State labor offices:

#### PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES

*Monthly period*

State, and industry group	Per cent of change, November to December, 1929		State, and industry group	Per cent of change, December, 1929, to January, 1930	
	Employment	Pay roll		Employment	Pay roll
<b>Illinois</b>					
Stone, clay, and glass products	-11.0	-18.0	<b>Maryland—Continued</b>		
Metals, machinery, and conveyances	-4.0	-8.4	Metal products other than iron and steel	-2.9	-7.0
Wood products	-9.1	-17.1	Tobacco products	-58.7	-57.8
Furs and leather goods	-2.5	+2.6	Machinery (not including transportation equipment)	+4.7	+1.9
Chemicals, oils, paints, etc.	-1.7	-2.5	Transportation equipment	+2.6	-2.2
Printing and paper goods	+3.4	+2.4	Car building and repairing	-26.7	-19.7
Textiles	-5.0	-3.8	Miscellaneous	-5.7	-9.1
Clothing and millinery	+1.0	+22.3	All manufacturing	-3.4	+.8
Food, beverages, and tobacco	-2.3	+.6	Retail department stores	-25.2	-21.0
co.	-1.8	-.2	Wholesale establishments	-1.5	-4.8
Miscellaneous			Public utilities	+.3	+1.4
All manufacturing	-3.3	-4.9	Coal mines	+.1	-5.8
Trade, wholesale and retail	+2.9	-2.0	Hotels	-.1	-4.1
Services	+.3	+.0	Quarries	-31.4	-23.5
Public utilities	-1.7	-3.4			
Coal mining	+.2	+12.1	<b>Employment—index numbers (1919-1923 = 100)</b>		
Building and contracting	-14.1	-15.2			
All nonmanufacturing	-1.3	-2.3			
All industries	-2.6	-3.9			
<b>Iowa</b>					
Food and kindred products			November, 1929	December, 1929	
Textiles	-3.4				
Iron and steel works	-15.3				
Lumber products	+4.1				
Leather products	-4.5				
Paper products, printing and publishing	-14.8				
Patent medicines, chemicals, and compounds	-1.7				
Stone and clay products	-.6				
Tobacco and cigars	-12.3				
Railway-car shops	+.4				
Various industries	-6.1				
All industries	-2.7				
	-3.0				
<b>Maryland</b>					
Food products	-5.1	-2.0			
Textiles	-3.3	+18.0			
Iron and steel and their products	-1.5	-1.9			
Lumber and its products	-6.3	-8.5			
Leather and its products	+1.1	+11.1			
Rubber tires	-.4	+7.2			
Paper and printing	-4.4	-9.0			
Chemicals and allied products	-.6	+1.0			
Stone, clay, and glass products	-8.3	-14.9			
			All industries	76.1	73.2

**PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED  
STATES—Continued**

***Monthly period—Continued***

State, and industry group	Per cent of change, November to De- cember, 1929		State, and industry group	Per cent of change, December, 1929, to January, 1930				
	Employ- ment	Pay roll		Employ- ment	Pay roll			
<b>New Jersey</b>								
Food and kindred products	-5.4	-2.1	Printing: Job work	-1.7	-0.8			
Textiles and their products	-2.0	-2.6	Public utilities:					
Iron and steel and their products	-4.9	-6.6	Steam-railway shops	+2.2	-3.1			
Lumber and its products	+1.9	+5.3	Street railways	+12.9	+9.1			
Leather and its products	-3.3	-5.3	Water, light, and power	-6.6	-8.1			
Tobacco products	+4.9	+7.8	Stone, clay, and glass:					
Paper and printing	-6.6	-1.7	Brick and tile	-24.8	-4.3			
Chemicals and allied prod- ucts	-1.4	-4.5	Cement and plaster	-1.0	-1.9			
Stone, clay, and glass products	-3.2	-3.9	Crushed stone	-4.8	-125.7			
Metal products other than iron and steel	-3.2	-3.4	Glass manufacture	-26.1	-30.5			
Vehicles for land transpor- tation	-22.6	-16.4	Textiles and cleaning:					
Miscellaneous	-12.0	-6.9	Textile manufacture	+4.4	+8.8			
All industries	-5.2	-5.2	Laundries, etc.	+3.6	+5.6			
<b>New York</b>								
Stone, clay, and glass	-5.1	-5.2	Woodworking:					
Metals and machinery	-4.3	-3.6	Sawmills	-7.3	-3.7			
Wood manufactures	-7.6	-10.0	Millwork, etc.	-6.4	-16.5			
Furs, leather, and rubber goods	-8.8	+2.8	All industries	-2.9	-3.5			
Chemicals, oils, paints, etc.	-1.6	-2						
Paper	-7.7	-6	<b>Index numbers (1923- 1925=100) — em- ployment</b>					
Printing and paper goods	+1.1	+9	December, 1929	January, 1930				
Textiles	-5.4	-9.8						
Clothing and millinery	-4.3	-2.7						
Food and tobacco	-7.8	-6.5						
Water, light, and power	+1.6	+2.9						
All industries	-3.9	-3.3						
<b>Oklahoma</b>								
Cottonseed-oil mills	-1.0	-2.9	<b>Pennsylvania</b>					
Food production:			Metal products	96.1	96.6			
Bakeries	-4.8	-0	Transportation equipment	80.7	180.9			
Confections	-41.1	-33.3	Textile products	107.4	105.0			
Creameries and dairies	-1.0	+8.8	Foods and tobacco	110.1	106.5			
Flour mills	+4.2	+12.7	Stone, clay, and glass prod- ucts	77.3	72.8			
Ice and ice cream	-1.0	-5.1	Lumber products	94.0	83.5			
Meat and poultry	-8.7	-6.7	Chemical products	98.6	95.1			
Lead and zinc:			Leather and rubber prod- ucts	103.3	102.4			
Mines and mills	-7.1	-11.5	Paper and printing	103.2	100.5			
Smelters	+9.4	+3.4	All manufacturing	99.0	97.7			
Metals and machinery:								
Auto repairs, etc.	+3.0	-10.2	<b>Pay roll</b>					
Machine shops and foundries	-4.8	+3.4	Metal products	97.3	99.7			
Tank construction and erection	-1.9	-2.4	Transportation equipment	80.3	177.4			
Oil industry:			Textile products	115.3	106.7			
Producing and gasoline manufacture	-3	-6.0	Foods and tobacco	110.4	104.2			
Refineries	+0	+4.8	Stone, clay, and glass prod- ucts	71.8	64.2			
			Lumber products	96.0	79.8			
			Chemical products	101.1	98.0			
			Leather and rubber prod- ucts	107.6	104.7			
			Paper and printing	112.2	110.0			
			All manufacturing	100.6	99.2			

#### <sup>1</sup> Preliminary figures.

## PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

*Monthly period—Continued*

State, and industry group	Per cent of change, November to December, 1929		State, and industry group	Per cent of change, November to December, 1929		
	Employment	Pay roll		Employment	Pay roll	
<b>Wisconsin</b>						
<i>Manual</i>						
Logging	-2.0	+13.5	Wisconsin—Continued			
Mining:			<i>Manual—Continued</i>			
Lead and zinc	+75.4	+50.8	Communication:			
Iron	-10.0	-12.8	Steam railways	-6.0	-7.1	
Stone crushing and quarrying	-3.2	-20.5	Electric railways	-13.8	-10.0	
Manufacturing:			Express, telephone, and telegraph	+6.8	+8.8	
Stone and allied industries	-13.2	-16.7	Light and power	-7.0	-9.0	
Metal	-4.4	-15.4	Wholesale trade	-2.1	-1.0	
Wood	-6.0	-14.6	Hotels and restaurants	-3.3		
Rubber	-3.2	-14.5	Laundering and dyeing	-3.3	-3.8	
Leather	-4.6	-6.6				
Paper	-1.8	-7.2	<i>Nonmanual</i>			
Textiles	-1.6	-3.4	Manufacturing, mines, and quarries	.5	-1.2	
Foods	-10.1	-8.5	Construction	-.5	-.7	
Printing and publishing	+.3	+2.6	Communication	-.6	-2.5	
Chemicals (including soap, glue, and explosives)	-3.9	-10.0	Wholesale trade	-6.8	-6.3	
All manufacturing	-4.8	-11.6	Retail trade—sales force only	+22.2	+15.6	
Construction:			Miscellaneous professional services	+.2	-.2	
Building	-9.1	-10.9				
Highway	-35.9	-43.0				
Railroad	-33.6	-31.8				
Marine, dredging, sewer digging	+43.7	+21.6				

*Yearly Period*

State, and industry group	Per cent of change, December, 1928, to December, 1929		State, and industry group	Employment—index numbers (1925-1927=100)		
	Employment	Pay roll		December, 1928	December, 1929	
<b>California</b>						
<b>Illinois</b>						
Stone, clay, and glass products	-3.2	+1.7	Stone, clay, and glass products	94.5	77.3	
Metals, machinery, and conveyances	+2.6	+7.2	Metals, machinery, and conveyances	104.9	108.0	
Wood manufactures	-11.0	-12.0	Wood products	80.8	69.7	
Leather and rubber goods	-23.5	-32.2	Furs and leather goods	91.3	96.6	
Chemicals, oils, paints, etc.	+2.0	+3.6	Chemicals, oils, paints, etc.	99.5	98.0	
Printing and paper goods	+2.3	+2.4	Printing and paper goods	104.0	111.9	
Textiles	-7.0	-8.5	Textiles	90.5	93.9	
Clothing, millinery, and laundering	-.6	-1.4	Clothing and millinery	86.9	84.5	
Foods, beverages, and tobacco	-5.1	-.5	Food, beverages, and tobacco	96.2	93.3	
Water, light, and power	+30.6	+38.8	All manufacturing	99.2	99.3	
Miscellaneous	+28.3	+34.9	Trade, wholesale and retail	99.5	95.0	
All industries	+.5	+3.9	Public utilities	102.3	105.4	
			Coal mining	80.2	79.1	
			Building and contracting	100.0	78.4	
			All industries	99.4	99.3	

## PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

*Yearly period—Continued*

State, and industry group	Employment—index numbers (1919-1923=100)		State, and industry group	Per cent of change January, 1929, to January, 1930				
	Decem- ber, 1928	December, 1929		Employ- ment	Pay roll			
<b>Massachusetts</b>								
Boots and shoes	64.4	53.0	<b>Oklahoma—Continued</b>					
Bread and other bakery products	104.1	107.7	Lead and zinc:					
Cars and general shop construction and repairs, steam railroads	70.2	70.8	Mines and mills	-0.1	-2.3			
Clothing, men's and women's	92.1	79.3	Smelters	-37.8	-34.9			
Confectionery	87.6	87.2	Metals and machinery:					
Cotton goods	57.5	52.3	Auto repairs, etc.	-6.2	-24.6			
Dyeing and finishing, textiles	105.9	99.4	Machine shops and foundries	+8.9	+18.4			
Electrical machinery, apparatus, and supplies	104.2	90.7	Tank construction and erection	+6.7	+5.1			
Foundry and machine-shop products	68.1	73.6	Oil industry:					
Furniture	109.4	107.6	Producing and gasoline manufacture	+14.3	+7.8			
Hosiery and knit goods	71.5	69.6	Refineries	+13.7	+21.4			
Jewelry	108.3	103.3	Printing: Job work	+4.1	+7.0			
Leather, tanned, curried, and finished	75.8	82.8	Public utilities:					
Paper and wood pulp	92.2	94.2	Steam-railway shops	+5.0	+12.3			
Printing and publishing	109.1	115.6	Street railways	+23.1	+14.8			
Rubber footwear	101.3	92.0	Water, light, and power	+1.1	-7.3			
Rubber goods, tires, and tubes	82.6	73.1	Stone, clay, and glass:					
Silk goods	102.3	86.6	Brick and tile	-31.3	-43.7			
Textile machinery and parts	52.2	58.4	Cement and plaster	-12.0	-12.0			
Woolen and worsted goods	82.2	67.5	Crushed stone	+52.8	+44.0			
All industries	78.9	73.2	Glass manufacture	-38.4	-44.7			
<b>Per cent of change, December, 1928, to December, 1929</b>								
<b>New York</b>	Employ- ment	Pay roll	Textiles and cleaning:					
Stone, clay, and glass	-7.4	-9.0	Textile manufacture	+8.3	+15.5			
Metals and machinery	+.1	-2.3	Laundries, etc.	-.5	+2.3			
Wood manufactures	-11.4	-15.6	Woodworking:					
Furs, leather, and rubber goods	+4.3	+1.4	Sawmills	-13.7	-4.6			
Chemicals, oils, paints, etc.	+5.7	+6.4	Millwork, etc.	-14.5	-23.6			
Paper	+.2	+4.0	All industries	+1.4	+1.7			
Printing and paper goods	+3.9	+5.8	<b>Index numbers (1923-1925=100)—employment</b>					
Textiles	-4.7	-8.2	January, 1929	January, 1930				
Clothing and millinery	-1.9	-4.1	<b>Pennsylvania</b>					
Food and tobacco	-9.5	-8.3	Metal products	93.2	96.6			
Water, light, and power	-3.5	-1.8	Transportation equipment	73.3	180.9			
All industries	-1.3	-2.6	Textile products	102.6	105.0			
<b>January, 1929, to January, 1930</b>			Foods and tobacco	99.9	106.5			
<b>Oklahoma</b>			Stone, clay, and glass products	83.7	72.8			
Cottonseed-oil mills	+5.7	+6.4	Lumber products	90.9	83.5			
Food production:			Chemical products	90.6	95.1			
Bakeries	+25.4	+15.7	Leather and rubber products	96.3	102.4			
Confections	-42.3	-37.2	Paper and printing	96.1	100.5			
Creameries and dairies	+53.7	+76.2	All industries	93.7	97.7			
Flour mills	+24.8	+23.3	<b>Pay roll</b>					
Ice and ice cream	-15.5	+1.3	Metal products	98.6	99.7			
Meat and poultry	-1.6	+.6	Transportation equipment	75.6	177.4			
			Textile products	104.3	106.7			
			Foods and tobacco	97.8	104.2			
			Stone, clay, and glass products	76.1	64.2			
			Lumber products	90.5	79.8			
			Chemical products	90.3	98.0			
			Leather and rubber products	97.3	104.7			
			Paper and printing	105.6	110.0			
			All industries	96.3	99.2			

<sup>1</sup> Preliminary figures.

# WHOLESALE AND RETAIL PRICES

## Retail Prices of Food in the United States

THE following tables are compiled from simple averages of the actual selling prices<sup>1</sup> received monthly by the Bureau of Labor Statistics from retail dealers.

Table 1 shows for the United States retail prices of food, January, 15 and December 15, 1929, and January 15, 1930, as well as the percentage changes in the year and in the month. For example, the retail price per dozen fresh eggs was 50.6 cents on January 15, 1929; 62.8 cents on December 15, 1929; and 55.4 cents on January 15, 1930. These figures show an increase of 9 per cent in the year and a decrease of 12 per cent in the month.

The cost of various articles of food combined shows an increase of 0.4 per cent January 15, 1930, as compared with January 15, 1929, and a decrease of 1.7 per cent January 15, 1930, as compared with December 15, 1929.

TABLE 1.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE OR DECREASE JANUARY 15, 1930, COMPARED WITH JANUARY 15, 1929, AND DECEMBER 15, 1929

[Percentage changes of five-tenths of 1 per cent and over are given in whole numbers]

Article	Unit	Average retail prices on—			Per cent of increase (+) or decrease (-) Jan. 15, 1930, compared with—	
		Jan. 15, 1929	Dec. 15, 1929	Jan. 15, 1930	Jan. 15, 1929	Dec. 15, 1929
Sirloin steak	Pound	Cents	Cents	Cents	+1	+0.2
Round steak	do	48.4	48.9	49.0	+2	+0.4
Rib roast	do	42.6	43.4	43.6	+1	+1
Chuck roast	do	35.8	36.0	36.3	+2	+1
Plate beef	do	29.0	29.3	29.5	+1	+1
Pork chops	do	20.6	20.6	20.9	+1	+1
Bacon, sliced	do	32.3	34.3	35.3	+9	+3
Ham, sliced	do	43.0	42.5	42.4	-1	-0.2
Lamb, leg of	do	53.8	53.4	53.5	-1	+0.2
Hens	do	39.9	37.9	39.5	-1	+4
Salmon, red, canned	do	39.2	37.1	38.0	-3	+2
Milk, fresh	Quart	31.9	32.2	31.9	0	-1
Milk, evaporated	16-oz. can	14.3	14.4	14.2	-1	-1
Butter	Pound	11.4	10.4	10.4	-9	0
Oleomargarine (all butter substitutes)	do	57.7	51.6	44.2	-18	-9
Cheese	do	27.6	26.7	26.4	-4	-1
Lard	do	38.4	37.7	37.4	-3	-1
Vegetable lard substitute	do	18.5	17.6	17.2	-7	-2
Eggs, strictly fresh	Dozen	24.7	24.4	24.5	-1	+0.4
Bread	Pound	50.6	62.8	55.4	+9	-12
Flour	do	9.0	8.9	8.9	-1	0
Corn meal	do	5.1	5.1	5.1	0	0
Rolled oats	do	5.3	5.4	5.4	+2	0
Corn flakes	8-oz. pkg	8.9	8.8	8.8	-1	0
Wheat cereal	28-oz. pkg	9.5	9.5	9.5	0	0
		25.5	25.5	25.5	0	0

<sup>1</sup> In addition to monthly retail prices of food and coal, the bureau publishes periodically the prices of gas and electricity for household use in each of 51 cities. At present this information is being collected in June and December of each year.

TABLE 1.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE OR DECREASE JANUARY 15, 1930, COMPARED WITH JANUARY 15, 1929, AND DECEMBER 15, 1929—Continued

[Percentage changes of five-tenths of 1 per cent and over are given in whole numbers]

Article	Unit	Average retail prices on—			Per cent of increase (+) or decrease (-) Jan. 15, 1930, compared with—	
		Jan. 15, 1929	Dec. 15, 1929	Jan. 15, 1930	Jan. 15, 1929	Dec. 15, 1929
Macaroni.....	Pound.....	Cents 19.7	Cents 19.6	Cents 19.6	-1	0
Rice.....	do.....	9.8	9.6	9.6	-2	0
Beans, navy.....	do.....	13.2	13.1	12.7	-4	-3
Potatoes.....	do.....	2.3	3.8	3.9	+70	+3
Onions.....	do.....	7.6	5.0	5.1	-33	+2
Cabbage.....	do.....	5.8	4.4	5.1	-12	+16
Pork and beans.....	No. 2 can.....	11.7	11.5	11.4	-3	-1
Corn, canned.....	do.....	16.0	15.7	15.5	-3	-1
Peas, canned.....	do.....	16.8	16.5	16.5	-2	0
Tomatoes, canned.....	do.....	12.3	12.5	12.6	+2	+1
Sugar.....	Pound.....	6.7	6.6	6.6	-2	0
Tea.....	do.....	77.5	77.7	78.0	+1	+0.4
Coffee.....	do.....	49.5	46.3	43.8	-12	-5
Prunes.....	do.....	14.2	18.2	18.4	+30	+1
Raisins.....	do.....	11.7	12.3	12.3	+5	0
Bananas.....	Dozen.....	33.9	32.2	32.1	-5	-0.3
Oranges.....	do.....	46.4	43.5	46.8	+1	+8
Weighted food index.....					+0.4	-1.7

Table 2 shows for the United States average retail prices of specified food articles on January 15, 1913, and on January 15 of each year from 1924 to 1930, together with percentage changes in January of each of these specified years, compared with January, 1913. For example, the retail price per pound of butter was 40.9 cents in January, 1913; 61.3 cents in January, 1924; 52.3 cents in January, 1925; 55.4 cents in January, 1926; 58.4 cents in January, 1927; 57.8 cents in January, 1928; 57.7 cents in January, 1929; and 47.2 cents in January, 1930.

As compared with January, 1913, these figures show increases of 50 per cent in January, 1924; 28 per cent in January, 1925; 35 per cent in January, 1926; 43 per cent in January, 1927; 41 per cent in January, 1928, and January, 1929; and 15 per cent in January, 1930.

The cost of the various articles of food combined showed an increase of 58.1 per cent in January, 1930, as compared with January, 1913.

TABLE 2.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE JANUARY 15 OF CERTAIN SPECIFIED YEARS COMPARED WITH JANUARY 15, 1913

[Percentage changes of five-tenths of 1 per cent and over are given in whole numbers]

Article	Average retail price on Jan. 15—												Per cent of increase Jan. 15 of each specified year compared with Jan. 15, 1913																	
	1913		1924		1925		1926		1927		1928		1929		1930		1924		1925		1926		1927		1928		1929			
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	
Sirloin steak—pound	23.8	39.1	38.7	40.8	40.8	44.4	48.4	49.0	64	63	71	71	87	103	106															
Round steak—do	20.5	33.3	32.8	35.0	35.3	38.6	42.6	43.6	62	60	71	72	88	108	113															
Rib roast—do	18.8	28.6	28.5	30.0	30.3	32.7	35.8	36.3	52	52	60	61	74	90	93															
Chuck roast—do	14.9	20.7	20.5	22.1	22.7	25.4	29.0	29.5	39	38	48	52	70	95	98															
Plate beef—do	11.1	13.3	13.3	14.5	15.0	17.2	20.6	20.9	20	20	31	35	55	86	88															
Pork chops—do	18.7	27.4	30.7	36.5	36.6	31.3	32.3	35.3	47	64	95	96	67	73	89															
Bacon, sliced—do	25.4	37.2	40.3	48.2	48.9	44.6	43.0	42.4	46	59	90	93	76	69	67															
Ham, sliced—do	25.1	44.7	47.6	53.3	56.8	51.7	53.8	53.5	78	90	112	126	106	114	113															
Lamb, leg of—do	18.0	35.9	38.8	39.1	37.4	37.4	39.9	39.5	99	116	117	108	108	122	119															
Hens—do	20.2	34.5	35.8	38.6	38.5	36.8	39.2	38.0	71	77	91	91	82	94	88															
Salmon, canned, red—pound		31.2	31.7	37.3	33.5	35.3	31.9	31.9																						
Milk, fresh—quart	8.9	14.2	13.9	14.2	14.1	14.3	14.3	14.2	60	56	60	58	61	61	60															
Milk, evaporated—16-ounce can		12.2	11.1	11.6	11.4	11.5	11.4	10.4																						
Butter—pound	40.9	61.3	52.3	55.4	58.4	57.8	57.7	47.2	50	28	35	43	41	41	15															
Oleomargarine (all butter substitutes)—pound		29.7	30.1	31.3	29.2	27.6	27.6	26.4																						
Cheese—do	22.2	37.4	35.9	37.6	37.6	39.2	38.4	37.4	68	62	69	69	77	73	68															
Lard—do	15.4	18.7	22.8	22.3	20.0	18.9	18.5	17.2	21	48	45	30	23	20	12															
Vegetable lard substitute—pound		24.3	25.3	25.6	25.2	25.0	24.7	24.5																						
Eggs, strictly fresh—dozen	37.3	54.6	70.5	53.9	55.9	55.9	50.6	55.4	46	89	45	50	50	36	49															
Bread—pound	5.6	8.7	9.2	9.4	9.4	9.2	9.0	8.9	55	64	68	68	64	61	59															
Flour—do	3.3	4.5	6.0	6.2	5.6	5.3	5.1	5.1	36	82	88	70	61	55	55															
Corn meal—do	3.0	4.4	5.4	5.2	5.1	5.2	5.3	5.4	47	80	73	70	73	77	80															
Rolled oats—do		8.8	9.0	9.1	9.1	9.0	8.9	8.8																						
Corn flakes—8-ounce package		9.7	10.9	11.0	10.9	9.7	9.5	9.5																						
Wheat cereal—28-ounce package		24.3	24.5	25.3	25.5	25.6	25.5	25.5																						
Macaroni—pound	19.6	20.0	20.3	20.1	20.0	19.7	19.7	19.6																						
Rice—do	8.6	9.8	10.7	11.6	11.0	10.2	9.8	9.6	14	24	35	28	19	14	12															
Beans, navy—do		10.1	10.2	9.8	9.2	9.5	13.2	12.7																						
Potatoes—do	1.6	2.8	2.5	5.8	4.0	3.0	2.3	3.9	75	56	263	150	88	44	144															
Onions—do		6.1	5.9	5.9	5.5	5.1	7.6	5.1																						
Cabbage—do		4.9	4.6	5.6	4.7	4.2	5.8	5.1																						
Pork and beans—No. 2 can		12.9	12.5	12.3	11.7	11.4	11.7	11.4																						
Corn, canned—do	15.7	17.5	16.8	16.1	15.8	16.0	15.5																							
Peas, canned—do		17.9	18.5	17.8	17.2	16.8	16.8	16.5																						
Tomatoes, canned—pound		12.9	13.8	12.6	12.3	11.7	12.3	12.6																						
Sugar, granulated—pound	5.8	10.2	8.1	6.7	7.5	7.1	6.7	6.6	76	40	16	20	22	16	14															
Tea—do	54.3	71.0	74.2	70.1	77.5	77.4	77.5	78.0	31	37	40	43	43	43	44															
Coffee—do	29.9	38.2	51.6	51.3	50.2	48.5	49.5	43.8	28	73	72	68	62	66	46															
Prunes—do		17.9	17.4	17.2	16.0	13.6	14.2	18.4																						
Raisins—do		15.9	14.6	14.5	14.4	13.7	11.7	12.3																						
Bananas—dozen	38.8	33.2	35.8	34.5	34.6	33.9	32.1																							
Oranges—do	40.0	44.8	46.9	46.9	51.0	46.4	46.8		51.7	57.0	67.2	62.2	57.7	57.3	58.1															
All articles combined <sup>1</sup>																														

<sup>1</sup> Beginning with January, 1921, index numbers showing the trend in the retail cost of food have been composed of the articles shown in Tables 1 and 2, weighted according to the consumption of the average family. From January, 1913, to December, 1920, the index numbers included the following articles: Sirloin steak, round steak, rib roast, chuck roast, plate beef, pork chops, bacon, ham, lard, hens, flour, corn meal, eggs, butter, milk, bread, potatoes, sugar, cheese, rice, coffee, and tea.

Table 3 shows the trend in the retail cost of three important groups of food commodities, viz., cereals, meats, and dairy products, by years, from 1913 to 1929, and by months for 1928, 1929, and 1930. The articles within these groups are as follows.

Cereals: Bread, flour, corn meal, rice, rolled oats, corn flakes, wheat cereal, and macaroni.

**Meats:** Sirloin steak, round steak, rib roast, chuck roast, plate beef, pork chops, bacon, ham, hens, and leg of lamb.

**Dairy products:** Butter, cheese, fresh milk, and evaporated milk.

TABLE 3.—INDEX NUMBERS OF RETAIL COST OF CEREALS, MEATS, AND DAIRY PRODUCTS FOR THE UNITED STATES, 1913 TO JANUARY, 1930

[Average cost in 1913 = 100.0]

Year and month	Cereals	Meats	Dairy products	Year and month	Cereals	Meats	Dairy products
1913: Average for year.....	100.0	100.0	100.0	1928: Average for year—Continued			
1914: Average for year.....	106.7	103.4	97.1	August.....	168.2	189.5	148.3
1915: Average for year.....	121.6	99.6	96.1	September.....	166.7	195.8	151.2
1916: Average for year.....	126.8	108.2	103.2	October.....	165.9	188.9	151.1
1917: Average for year.....	186.5	137.0	127.6	November.....	165.3	184.9	152.5
1918: Average for year.....	194.3	172.8	153.4	December.....	164.2	179.1	153.5
1919: Average for year.....	198.0	184.2	176.6	1929: Average for year.....	164.1	188.4	148.6
1920: Average for year.....	232.1	185.7	185.1	January.....	164.1	180.9	151.9
1921: Average for year.....	179.8	158.1	149.5	February.....	164.1	180.3	152.6
1922: Average for year.....	159.3	150.3	135.9	March.....	164.1	182.8	152.4
1923: Average for year.....	156.9	149.0	147.6	April.....	164.1	187.5	148.9
1924: Average for year.....	160.4	150.2	142.8	May.....	163.5	191.2	147.5
1925: Average for year.....	176.2	163.0	147.1	June.....	163.0	192.4	146.8
1926: Average for year.....	175.5	171.3	145.5	July.....	163.5	195.9	146.8
1927: Average for year.....	170.7	169.9	148.7	August.....	164.7	196.0	147.1
1928: Average for year—January.....	167.2	179.2	150.0	September.....	165.2	194.2	148.1
February.....	168.0	168.3	152.2	October.....	163.5	189.2	149.3
March.....	166.8	167.1	150.7	November.....	163.6	184.1	147.0
April.....	167.2	170.3	147.8	December.....	162.9	181.8	144.9
May.....	168.3	175.4	147.3	1930: January.....	162.9	183.7	139.4
June.....	169.8	177.7	146.1				
July.....	169.3	184.4	147.1				

#### Index Numbers of Retail Prices of Food in the United States

IN TABLE 4 index numbers are given which show the changes in the retail prices of specified food articles, by years, for 1913 and 1920 to 1929,<sup>2</sup> and by months for 1929 and for January, 1930. These index numbers, or relative prices, are based on the year 1913 as 100, and are computed by dividing the average price of each commodity for each month and each year by the average price of that commodity for 1913. These figures must be used with caution. For example, the relative price of sirloin steak for the year 1929 was 196.9, which means that the average money price for the year 1929 was 96.9 per cent higher than the average money price for the year 1913. As compared with the relative price, 188.2 in 1928, the figures for 1929 show an increase of 8.7 points, but an increase of 4.6 per cent in the year.

In the last column of Table 4 are given index numbers showing changes in the retail cost of all articles of food combined. Since January, 1921, these index numbers have been computed from the average prices of the articles of food shown in Tables 1 and 2, weighted according to the average family consumption in 1918. (See March, 1921, issue, p. 25.) Although previous to January, 1921, the number of food articles has varied, these index numbers have been so computed as to be strictly comparable for the entire period. The index numbers based on the average for the year 1913 as 100 are 158.0 for December, 1929, and 155.4 for January, 1930.

The curve shown in the chart on this page pictures more readily to the eye the changes in the cost of the food budget than do the index numbers given in the table.

<sup>2</sup> For index numbers of each month, January, 1913, to December, 1926, see Bulletin No. 396, pp. 44 to 61; Bulletin No. 418, pp. 38 to 51; Bulletin No. 445, pp. 36 to 49; Bulletin No. 464, pp. 36 to 49; and Bulletin No. 495, pp. 32 to 45.

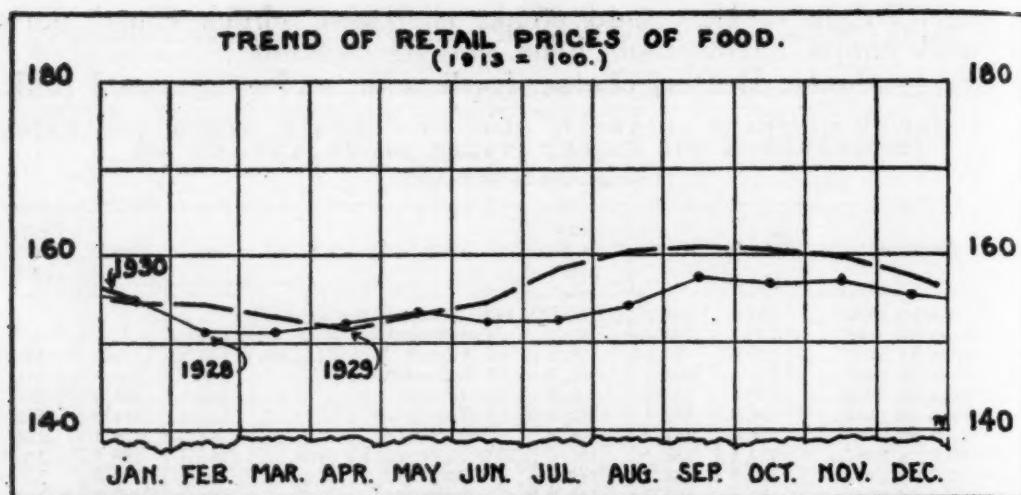


TABLE 4.—INDEX NUMBERS OF RETAIL PRICES OF PRINCIPAL ARTICLES OF FOOD, BY YEARS, 1913, 1920 TO 1929, AND BY MONTHS FOR 1929 AND 1930  
[Average for year 1913 = 100.0]

Year and month	Sirloin steak	Round steak	Rib roast	Chuck roast	Plate beef	Pork chops	Bacon	Ham	Hens	Milk	Butter	Cheese
1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1920	172.1	177.1	167.7	163.8	151.2	201.4	193.7	206.3	209.9	187.6	183.0	188.2
1921	152.8	154.3	147.0	132.5	118.8	166.2	158.2	181.4	186.4	164.0	135.0	153.9
1922	147.2	144.8	139.4	123.1	105.8	157.1	147.4	181.4	169.0	147.2	125.1	148.9
1923	153.9	150.2	143.4	126.3	106.6	144.8	144.8	169.1	164.3	155.1	144.7	167.0
1924	155.9	151.6	145.5	130.0	109.1	146.7	139.6	168.4	165.7	155.1	135.0	159.7
1925	159.8	155.6	149.5	135.0	114.1	174.3	173.0	195.5	171.8	157.3	143.1	166.1
1926	162.6	159.6	153.0	140.6	120.7	188.1	186.3	213.4	182.2	157.3	138.6	165.6
1927	167.7	166.4	158.1	148.1	127.3	175.2	174.8	204.5	173.2	158.4	145.2	170.1
1928	188.2	188.3	176.8	174.4	157.0	165.7	163.0	196.7	175.6	159.6	147.5	174.2
1929	196.9	199.1	185.4	186.9	172.7	175.7	161.1	204.1	186.4	160.7	143.9	171.9
1929: January	190.6	191.0	180.8	181.3	170.2	153.8	159.3	200.0	184.0	160.7	150.7	173.8
February	188.2	188.8	178.8	179.4	167.8	157.1	158.2	199.6	186.4	160.7	152.7	172.9
March	188.6	189.2	179.3	180.0	167.8	167.6	158.9	201.9	190.1	160.7	152.5	172.9
April	192.9	194.6	183.8	184.4	170.2	176.7	160.4	203.3	196.2	159.6	145.7	172.4
May	198.4	201.3	187.9	190.0	174.4	179.5	160.7	204.8	198.1	159.6	142.3	171.9
June	201.6	205.4	189.9	191.9	176.0	179.0	162.2	205.6	193.9	159.6	140.5	171.9
July	206.7	210.8	192.9	195.6	177.7	188.1	164.1	209.7	187.3	160.7	139.4	171.5
August	206.3	210.8	191.9	194.4	176.0	192.4	165.6	211.2	185.0	160.7	140.5	171.0
September	202.8	206.7	189.4	191.9	175.2	193.8	164.4	209.7	184.0	160.7	143.1	171.9
October	198.0	199.6	186.9	187.5	173.6	185.2	161.9	204.8	180.3	161.8	145.4	171.5
November	194.1	196.4	183.3	183.8	171.1	170.5	159.3	204.4	177.0	161.8	139.7	171.2
December	192.5	194.6	181.8	183.1	170.2	163.3	157.4	198.5	174.2	161.8	134.7	170.0
1930: January	192.9	195.5	183.3	184.4	172.7	168.1	157.0	198.9	178.4	159.6	128.2	169.6

Year and month	Lard	Eggs	Bread	Flour	Corn meal	Rice	Pota-toes	Sugar	Tea	Coffee	All arti-cles <sup>1</sup>
1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1920	186.7	197.4	205.4	245.5	216.7	200.0	370.6	352.7	134.7	157.7	203.4
1921	113.9	147.5	176.8	175.8	150.0	109.2	182.4	145.5	128.1	121.8	153.3
1922	107.6	128.7	155.4	154.5	130.0	109.2	164.7	132.7	125.2	121.1	141.6
1923	112.0	134.8	155.4	142.4	136.7	109.2	170.6	183.6	127.8	126.5	146.2
1924	120.3	138.6	157.1	148.5	156.7	116.1	158.8	167.3	131.4	145.3	145.9
1925	147.5	151.0	167.9	184.8	180.0	127.6	211.8	130.9	138.8	172.8	157.4
1926	138.6	140.6	167.9	181.8	170.0	133.3	288.2	125.5	141.0	171.1	160.6
1927	122.2	131.0	166.1	166.7	173.3	123.0	223.5	132.7	142.5	162.1	155.4
1928	117.7	134.5	162.5	163.6	176.7	114.9	158.8	129.1	142.3	165.1	154.3
1929	115.8	142.0	160.7	154.5	176.7	111.5	188.2	120.0	142.6	164.8	156.7
1929: January	117.1	146.7	160.7	154.5	176.7	112.6	135.3	121.8	142.5	166.1	154.6
February	116.5	142.3	160.7	154.5	176.7	112.6	135.3	120.0	142.6	166.1	154.4
March	116.5	122.0	160.7	154.5	176.7	112.6	135.3	118.2	142.6	166.4	153.0
April	117.1	106.4	160.7	154.5	176.7	112.6	135.3	116.4	142.6	166.4	151.6
May	116.5	112.2	160.7	151.5	176.7	111.5	158.8	116.4	142.6	166.1	153.3
June	115.8	120.0	160.7	148.5	176.7	111.5	182.4	116.4	142.5	165.8	154.8
July	115.8	127.8	160.7	151.5	176.7	111.5	229.4	116.4	142.3	165.8	158.5
August	116.5	140.0	160.7	157.6	176.7	112.6	235.3	120.0	142.5	165.4	160.2
September	117.1	153.6	160.7	160.6	176.7	111.5	229.4	121.8	142.6	165.1	160.8
October	115.8	168.1	158.9	157.6	176.7	111.5	223.5	121.8	142.6	164.8	160.5
November	113.9	183.5	158.9	157.6	176.7	111.5	223.5	121.8	142.3	162.1	159.7
December	111.4	182.0	158.9	154.5	180.0	110.3	223.5	120.0	142.8	155.4	158.0
1930: January	108.9	160.6	168.9	154.5	180.0	110.3	229.4	120.0	143.4	147.0	155.4

<sup>1</sup> 22 articles in 1913-1920; 43 articles in 1921-1929.

## WHOLESALE AND RETAIL PRICES

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930

[Exact comparison of prices in different cities can not be made for some articles, particularly meats and vegetables, owing to differences in trade practices]

Article	Atlanta, Ga.		Baltimore, Md.		Birmingham, Ala.		Boston, Mass.		Bridgeport, Conn.		Jan. 15, 1930	
	1929		1929		1929		1929		1929			
	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15		
Sirloin steak—pound	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	
Round steak—do	48.3	47.1	47.5	45.1	45.8	46.0	49.6	50.3	50.0	73.1	73.4	
Rib roast—do	43.3	42.5	42.5	41.9	42.7	43.1	41.9	43.1	43.9	58.3	58.0	
Chuck roast—do	35.7	34.5	34.4	34.6	35.1	35.2	34.2	35.8	35.2	43.1	57.5	
Plate beef—do	28.6	28.0	27.2	28.2	28.2	28.9	28.1	28.8	29.3	33.6	34.5	
Pork chops—do	19.7	20.5	20.6	20.5	20.6	18.7	20.3	19.7	23.0	21.5	17.2	
Bacon, sliced—do	33.0	33.3	32.5	29.0	31.8	32.4	31.3	32.4	32.6	33.5	35.7	
Ham, sliced—do	40.5	38.9	37.8	37.0	37.6	38.0	40.8	40.0	38.6	42.0	40.9	
Lamb, leg of—do	55.3	54.2	51.5	55.5	54.6	54.3	52.4	53.1	53.6	60.5	57.3	
Hens—do	39.4	40.1	38.8	37.6	37.4	39.3	41.8	41.8	41.3	40.2	38.1	
Salmon, canned, red—pound	36.5	35.9	36.5	40.7	38.5	39.3	35.3	34.7	35.8	40.8	39.8	
Milk, fresh—quart	35.2	33.3	33.4	29.0	28.5	28.5	33.1	33.1	32.8	30.9	31.3	
Milk, evaporated—16-ounce can	16.5	17.0	17.0	14.0	14.0	14.0	18.7	17.0	17.0	15.5	15.6	
Butter—pound	40.5	38.9	37.8	37.0	37.6	38.0	40.8	40.0	38.6	42.0	40.9	
Oleomargarine (all butter substitutes)—pound	59.5	54.7	52.0	61.6	56.5	52.0	60.1	54.4	51.7	59.4	53.8	
Cheese—do	29.4	28.1	27.7	28.8	27.6	28.0	31.5	30.3	29.3	30.1	28.1	
Lard—do	37.4	35.1	33.9	37.1	35.6	35.3	37.6	35.9	35.7	40.6	40.1	
Vegetable lard substitute—pound	18.6	17.0	16.7	16.4	15.9	16.1	18.4	17.0	16.9	18.1	17.7	
Eggs, strictly fresh—dozen	22.1	21.3	20.0	23.0	22.9	23.2	20.6	21.8	21.9	25.3	26.7	
Bread—pound	51.7	61.2	56.5	52.0	64.4	58.1	50.9	62.0	55.5	64.7	81.4	
Flour—dozen	10.8	10.0	9.9	8.5	8.5	8.5	9.9	9.7	9.8	8.5	8.8	
Corn meal—do	6.6	6.2	6.2	4.7	4.8	4.8	6.5	6.2	6.3	5.3	5.6	
Rolled oats—do	4.4	4.1	4.0	4.2	4.0	4.0	4.1	4.4	4.4	7.0	6.8	
Corn flakes—8-ounce package	9.9	9.7	9.8	8.2	8.1	8.1	10.1	9.6	9.4	8.9	8.4	
Wheat cereal—28-ounce package	9.8	9.8	9.7	8.6	8.8	8.8	9.9	9.4	9.7	9.4	9.1	
Macaroni—pound	27.0	27.4	27.0	24.0	24.2	24.2	27.1	27.1	27.0	25.2	25.1	
Rice—do	21.5	20.9	20.5	19.0	19.1	18.8	17.9	17.8	18.0	21.3	21.8	
Beans, navy—do	9.7	9.4	8.8	9.1	9.0	8.9	9.2	9.1	9.1	10.5	10.3	
Potatoes—do	14.8	15.5	14.5	12.7	12.4	11.9	14.3	14.7	13.9	12.6	13.1	
Onions—do	3.5	4.3	4.9	2.1	3.9	4.0	3.7	4.4	4.7	2.1	3.7	
Cabbage—do	9.3	7.4	7.3	7.6	5.2	5.5	8.4	6.4	6.1	7.8	5.0	
Pork and beans—No. 2 can	6.6	4.8	5.7	6.0	4.4	5.5	6.0	4.7	5.9	6.0	5.3	
Corn, canned—do	11.5	11.0	10.8	10.8	10.8	10.6	11.7	11.1	10.8	12.5	12.9	
Peas, canned—do	18.6	17.4	16.9	16.5	17.2	16.7	16.6	16.4	16.7	18.1	17.9	
Tomatoes, canned—No. 2 can	18.5	18.7	18.6	15.2	14.7	15.1	18.9	19.1	20.2	19.9	19.7	
Sugar, granulated—pound	12.5	11.7	11.4	10.7	10.2	11.3	11.4	11.4	10.9	13.0	14.1	
Tea—do	7.4	7.3	6.9	5.7	5.7	5.7	7.0	6.9	6.8	6.7	6.3	
Coffee—do	105.5	103.0	101.3	72.8	73.2	73.0	97.4	94.0	9.5	76.8	78.9	
Prunes—do	53.0	46.2	41.6	45.7	42.4	40.4	51.3	49.7	46.7	53.8	48.8	
Raisins—dozen	15.5	17.7	18.1	12.1	16.9	16.8	16.3	20.7	20.4	14.3	17.6	
Bananas—dozen	13.3	14.1	14.0	10.6	11.0	11.1	13.1	13.0	12.8	10.8	11.6	
Oranges—dozen	27.9	27.5	28.1	23.7	23.7	23.3	37.8	35.7	34.4	45.8	40.0	

<sup>1</sup> The steak for which prices are here quoted is called "sirloin" in this city, but in most of the other cities included in this report it would be known as "porterhouse" steak.

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Continued

Article	Buffalo, N. Y.				Butte, Mont.				Charleston, S. C.				Chicago, Ill.				Cincinnati, Ohio	
	1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929	
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Sirloin steak, pound	46.7	49.5	50.1	35.7	35.5	36.2	36.9	38.5	38.5	52.5	55.0	54.7	45.2	46.0	46.3	Sir		
Round steak, do	40.3	42.6	42.9	33.6	33.9	34.8	35.0	38.1	37.7	43.2	45.8	46.0	41.7	43.4	43.7	Rou		
Rib roast, do	35.3	35.3	36.2	30.8	30.0	31.4	30.0	31.9	30.6	39.7	40.9	41.4	37.0	37.5	38.2	Rib		
Chuck roast, do	30.2	30.8	31.2	24.7	25.6	26.5	24.5	24.2	33.1	34.7	35.0	28.1	28.8	28.6	Chu			
Plate beef, do	19.4	20.2	19.9	17.6	17.0	18.3	18.6	19.4	20.3	20.5	20.3	21.1	22.2	22.4	23.2	Pla		
Pork chops, do	34.5	35.2	36.3	30.9	34.4	35.5	32.2	34.6	35.0	31.1	37.6	35.4	28.7	29.8	31.8	Po		
Bacon, sliced, do	39.6	39.1	39.1	48.8	47.1	47.7	37.2	37.3	37.1	46.7	46.8	46.9	37.7	39.3	39.3	Ba		
Ham, sliced, do	52.9	51.5	51.6	53.8	53.8	54.7	46.7	47.5	46.8	52.7	55.9	55.9	52.9	52.6	53.1	Ha		
Lamb, leg of, do	37.1	34.1	36.1	37.0	36.5	38.4	42.0	43.0	44.0	41.2	37.9	39.8	41.4	39.8	40.4	La		
Hens, do	41.0	37.7	37.9	33.4	31.6	35.2	37.4	37.2	37.2	41.2	36.7	38.8	42.7	36.3	38.3	Ha		
Salmon, canned, red																Sa		
pound	30.4	29.8	29.9	32.4	31.3	32.6	28.8	29.8	29.8	33.3	34.0	33.6	30.2	29.9	30.7	M		
Milk, fresh, quart	14.0	14.0	14.0	14.0	14.0	19.0	19.0	18.3	14.0	14.0	14.0	14.0	14.0	14.0	14.0	M		
Milk, evaporated																O		
16-ounce can	11.2	10.1	10.0	11.2	10.4	10.3	11.8	10.0	10.0	11.1	10.3	10.1	11.3	10.5	10.6	BU		
Butter, pound	58.1	52.1	46.6	54.5	53.5	45.5	57.4	50.8	47.2	56.0	48.6	44.3	50.2	52.8	46.3	O		
Oleomargarine (all butter substitutes)																C		
pound	27.3	25.7	26.1				29.0	27.3	27.1	26.2	26.4	26.4	28.7	27.3	27.1	V		
Cheese, do	39.2	38.7	38.5	37.5	36.7	37.1	35.2	34.5	34.3	42.4	41.9	41.3	39.2	39.8	39.3	E		
Lard, do	17.6	16.5	16.1	21.9	20.8	20.8	19.1	18.4	18.3	18.5	18.3	17.7	16.8	16.9	16.3	C		
Vegetable lard substitute, pound	24.8	24.4	24.4	30.7	29.8	29.3	21.1	20.7	21.2	25.8	25.5	25.4	25.3	26.0	26.1	F		
Eggs, strictly fresh																B		
dozen	53.0	65.6	58.0	54.0	64.1	55.6	51.2	56.5	55.1	53.8	64.9	57.4	48.4	65.7	52.7	F		
Bread, pound	8.3	8.3	8.0	9.8	9.8	9.7	11.0	11.0	11.0	9.9	9.7	9.4	8.6	8.7	8.7	C		
Flour, do	4.6	4.7	4.6	4.7	4.9	4.9	6.5	6.5	6.4	4.5	4.7	4.6	5.3	5.4	5.3	C		
Corn meal, do	5.2	5.2	5.2	6.4	6.0	6.1	3.9	4.0	4.1	6.9	6.6	6.7	4.5	5.0	4.9	V		
Rolled oats, do	8.7	8.5	8.4	8.2	7.9	8.3	9.3	9.3	9.2	8.2	8.3	8.1	9.0	8.9	8.9	C		
Corn flakes																V		
8-ounce package	9.2	9.1	9.1	10.2	10.3	10.2	10.0	10.0	10.0	9.2	9.2	9.2	9.6	9.6	9.7	W		
Wheat cereal																M		
28-ounce package	24.9	24.8	25.0	27.9	28.4	28.6	25.8	25.2	25.2	24.7	25.3	25.3	24.9	24.8	24.9	G		
Macaroni, pound	21.4	21.3	21.2	19.6	20.2	20.2	18.5	19.2	19.0	18.6	19.0	18.9	18.5	19.8	19.3	H		
Rice, do	9.6	8.8	8.8	10.7	11.0	11.1	6.5	6.6	6.5	10.5	10.4	10.4	9.6	9.9	9.9	H		
Beans, navy, do	13.0	13.5	12.6	12.7	13.2	12.9	14.1	14.5	15.0	13.1	13.1	13.1	13.3	12.1	11.7	I		
Potatoes, do	1.8	3.3	3.3	1.6	3.3	3.5	2.6	4.2	4.2	2.3	3.9	4.0	2.5	4.1	4.3	G		
Onions, do	8.3	5.7	6.1	6.8	4.1	4.7	8.8	5.7	6.4	7.7	5.3	5.1	7.5	5.2	5.4	C		
Cabbage, do	5.3	4.1	5.0	7.2	4.9	6.2	5.7	4.8	5.1	6.3	5.0	5.9	6.1	4.5	5.3	I		
Pork and beans																C		
No. 2 can	10.3	10.1	9.8	13.9	13.7	13.2	10.6	10.4	10.0	12.6	12.4	11.9	11.4	11.2	11.2	T		
Corn canned, do	16.2	15.6	15.6	14.3	14.3	14.3	15.0	14.6	15.0	16.1	15.8	15.4	15.5	15.9	15.6	I		
Peas, canned, do	16.1	15.4	15.6	14.2	14.3	14.6	16.2	16.0	16.2	16.9	16.5	16.3	16.4	17.0	17.0	T		
Tomatoes, canned																S		
No. 2 can	13.3	13.4	13.4	12.4	12.4	12.8	10.4	10.1	10.1	13.8	14.0	13.9	12.9	13.3	13.1	S		
Sugar, granulated																C		
pound	6.4	6.3	6.2	8.0	7.7	7.7	6.4	6.2	6.3	6.5	6.5	6.5	7.0	6.9	6.8	C		
Tea, do	68.6	68.5	68.5	82.6	82.4	80.3	85.3	81.2	83.4	70.8	73.3	75.5	80.0	80.8	80.8	O		
Coffee, do	47.5	44.8	42.5	55.1	53.0	50.7	46.8	44.8	40.8	47.4	45.2	43.2	46.3	43.4	40.4	I		
Prunes, do	13.7	18.5	18.7	13.9	16.7	18.1	11.8	17.9	17.0	16.1	19.5	19.2	14.4	18.6	19.1	I		
Raisins, do	11.6	12.0	12.1	13.2	13.2	13.2	9.9	11.2	11.0	11.6	12.2	12.5	11.8	12.6	12.4	I		
Bananas, dozen	41.6	41.8	39.9	213.8	213.9	213.6	26.5	26.7	27.2	38.3	39.2	39.1	38.3	37.0	38.9	I		
Oranges, do	55.2	45.4	52.4	49.7	49.1	51.2	25.7	32.6	32.0	48.8	54.0	56.9	41.2	41.2	44.4	I		

\* Per pound.

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 15 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Continued

Article	Cleveland, Ohio				Columbus, Ohio				Dallas, Tex.				Denver, Colo.				Detroit, Mich.				
	1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929		Jan. 15, 1930		
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Sirloin steak—pound	44.7	44.8	44.5	46.5	47.8	48.2	44.0	47.8	46.8	39.4	38.2	38.6	50.5	48.8	49.3						
Round steak—do	39.9	39.2	39.7	42.0	43.4	44.1	41.5	45.5	45.1	35.3	34.8	36.1	41.7	41.1	40.8						
Rib roast—do	33.6	33.1	33.7	36.6	36.8	37.9	37.3	37.3	37.5	29.8	29.4	30.8	38.3	37.1	37.5						
Chuck roast—do	30.0	29.2	30.0	30.8	31.3	32.1	30.0	30.3	30.1	25.4	24.8	25.6	30.1	30.0	29.9						
Plate beef—do	20.1	20.5	21.0	22.3	23.3	24.1	23.5	24.2	24.2	17.0	17.1	17.0	19.9	20.4	21.1						
Pork chops—do	30.8	32.1	34.7	29.8	31.8	32.8	33.5	36.3	36.1	29.8	33.3	33.2	34.1	35.6	37.1						
Bacon, sliced—do	41.0	40.0	39.6	43.9	43.7	43.9	45.3	41.2	41.1	41.2	40.9	41.0	43.5	41.7	41.9						
Ham, sliced—do	55.1	51.7	52.1	52.5	50.5	50.9	57.0	55.4	55.0	53.8	53.5	53.1	58.4	57.0	46.4						
Lamb, leg of—do	38.3	35.9	37.0	45.0	43.0	42.8	44.4	42.6	42.8	36.2	35.0	35.5	41.6	37.7	38.8						
Hens—do	40.3	35.8	38.1	40.0	39.2	36.3	32.9	33.8	35.3	32.3	29.7	31.3	43.2	38.8	38.7						
Salmon, canned, red—pound	31.5	32.3	32.1	33.8	33.1	31.2	34.7	32.8	32.6	30.9	33.3	33.4	30.6	31.1	31.3						
Milk, fresh—quart	13.7	11.0	12.0	12.0	12.0	12.0	13.0	13.0	13.0	12.0	12.0	12.0	14.0	14.0	14.0						
Milk, evaporated—16-ounce can	11.3	10.0	9.9	11.4	10.6	10.4	13.4	12.6	12.4	10.7	10.0	9.9	11.1	10.3	10.3						
Butter—pound	58.6	51.3	45.6	57.8	48.1	44.0	58.1	53.5	49.4	53.1	45.8	40.4	57.5	50.3	45.5						
Oleomargarine (all butter substitutes)—pound	28.7	28.1	27.8	27.4	26.7	25.9	28.8	27.3	26.4	24.7	23.8	23.3	26.3	24.9	25.3						
Cheese—do	40.2	40.4	40.5	37.5	37.4	36.6	38.5	36.7	36.5	39.0	37.4	37.9	39.5	38.3	37.4						
Lard—do	19.9	18.2	18.0	15.7	15.3	14.8	21.3	21.2	21.1	18.7	17.8	16.7	18.0	17.3	16.8						
Vegetable lard substitute—pound	26.5	26.3	26.1	26.6	27.0	27.0	23.8	21.2	21.0	21.0	20.4	19.6	26.4	25.7	25.8						
Eggs, strictly fresh—dozen	52.9	66.3	57.3	46.5	57.6	51.3	44.8	62.5	58.9	43.6	58.7	46.0	54.8	62.3	55.7						
Bread—pound	7.8	7.8	7.8	7.8	7.7	7.7	9.2	8.9	8.9	7.6	7.7	7.6	8.1	8.0	7.9						
Flour—do	5.1	5.2	5.2	4.9	4.9	4.8	5.3	5.2	5.1	3.8	4.0	4.0	4.7	4.8	4.9						
Corn meal—do	5.5	5.6	5.4	4.3	4.2	4.2	4.4	4.6	4.6	4.5	4.7	4.7	6.1	5.9	6.0						
Rolled oats—do	9.1	8.8	8.7	9.1	9.0	9.1	9.8	9.6	9.5	7.5	7.4	7.6	9.2	8.8	8.7						
Corn flakes—8-ounce package	9.8	10.0	9.8	10.0	9.8	9.6	9.7	9.8	9.6	9.7	9.5	9.5	9.7	9.6	9.5						
Wheat cereal—28-ounce package	25.9	26.1	25.5	26.6	27.0	26.8	27.6	27.0	27.6	24.5	24.7	24.8	26.1	26.6	26.6						
Macaroni—pound	20.8	19.5	19.8	19.8	19.5	20.0	21.4	20.5	20.5	19.4	19.4	19.4	20.6	18.8	19.3						
Rice—do	10.2	10.3	10.2	11.6	11.2	11.2	11.7	10.5	10.3	9.0	8.9	9.2	11.4	9.8	9.6						
Beans, navy—do	13.3	13.5	12.6	13.6	11.5	11.6	14.7	14.4	14.1	12.3	12.1	11.4	13.4	11.8	11.5						
Potatoes—do	2.1	3.9	4.1	2.1	3.7	3.8	4.1	5.4	5.3	1.9	3.1	3.5	1.6	3.3	3.5						
Onions—do	7.4	4.2	4.4	7.8	4.6	4.5	7.8	7.0	6.5	5.8	4.0	3.7	7.3	4.3	4.7						
Cabbage—do	5.5	4.3	4.7	5.9	4.3	4.7	6.3	5.3	5.7	4.2	4.1	5.1	6.0	4.0	4.9						
Pork and beans—No. 2 can	12.0	11.7	11.7	11.4	10.9	10.7	12.8	12.8	12.6	11.7	11.3	11.3	11.8	11.0	10.7						
Corn, canned—do	16.7	16.4	16.4	13.9	14.0	14.5	18.3	17.0	17.3	14.1	14.6	14.6	15.7	15.2	15.3						
Peas, canned—do	17.4	16.7	17.0	14.8	15.2	15.1	22.0	21.7	22.1	14.8	15.5	15.4	15.6	15.3	15.3						
Tomatoes, canned—No. 2 can	13.6	13.9	14.1	12.8	13.2	13.0	12.8	13.1	13.1	11.6	13.3	13.1	12.8	12.1	12.3						
Sugar, granulated—pound	7.3	7.2	7.3	7.5	7.2	7.0	7.3	7.2	7.0	7.3	7.1	7.2	7.1	6.9	6.9						
Tea—do	80.2	83.0	85.4	84.5	90.7	89.1	104.8	100.5	102.2	69.8	70.0	72.2	72.2	79.6	80.1						
Coffee—do	51.4	46.0	43.3	49.2	47.0	44.8	59.2	55.1	49.4	50.1	48.4	46.3	47.9	45.7	44.4						
Prunes—do	14.0	18.5	19.3	15.6	18.9	19.1	17.7	20.0	20.5	15.0	20.1	20.0	15.5	18.3	18.5						
Raisins—do	11.8	12.4	12.3	10.9	12.7	12.5	13.4	13.0	13.3	10.8	12.5	12.5	11.9	12.3	12.4						
Bananas—dozen	10.2	9.4	11.0	40.6	37.5	37.5	35.0	31.3	29.8	10.7	10.9	10.5	37.0	31.4	32.8						
Oranges—do	54.9	49.6	53.4	52.0	50.4	49.0	50.8	43.4	49.5	46.7	40.2	41.9	52.6	47.5	49.0						

\* Per pound.

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Continued

Article	Fall River, Mass.				Houston, Tex.				Indianapolis, Ind.				Jacksonville, Fla.				Kansas City, Mo.	
	1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929	
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Sirloin steak—pound	3 69.8	68.9	67.8	40.0	41.9	42.9	46.4	47.1	46.4	38.5	40.0	41.0	46.2	49.1	48.6			
Round steak—do	54.6	53.0	54.2	39.1	40.0	41.2	45.5	45.5	45.2	33.8	35.9	36.0	41.1	43.2	43.1			
Rib roast—do	37.5	38.7	38.1	31.2	32.1	32.7	34.8	34.4	34.4	30.3	32.3	32.5	33.5	34.5	34.9			
Chuck roast—do	29.4	30.8	29.8	25.8	25.2	26.8	30.8	30.5	30.3	22.9	25.8	25.3	27.0	28.4	28.0			
Plate beef—do	18.7	18.5	17.8	23.2	22.0	23.5	20.9	20.8	20.8	15.5	16.4	16.7	20.6	20.9	20.8			
Pork chops—do	32.5	33.4	35.0	31.8	35.0	35.8	31.8	32.3	33.2	29.8	31.4	32.0	29.6	31.5	33.5			
Bacon, sliced—do	40.0	37.0	37.7	39.8	40.9	41.3	42.1	39.7	39.3	36.4	36.8	37.0	41.8	40.7	41.4			
Ham, sliced—do	52.6	52.3	51.5	50.0	51.5	51.9	55.0	52.9	52.9	47.5	47.7	48.5	51.2	49.8	50.8			
Lamb, leg of—do	42.7	40.7	41.2	33.3	35.6	37.1	44.0	40.7	39.3	40.0	36.7	38.0	35.0	35.4	35.9			
Hens—do	44.8	44.2	43.7	39.4	36.8	39.1	42.2	40.8	40.0	35.3	36.2	36.3	36.1	33.0	34.4			
Salmon, canned, red—pound	33.8	33.0	33.2	30.4	30.5	30.0	32.6	33.0	32.7	31.5	29.8	29.6	35.0	35.2	35.0			
Milk, fresh—quart	15.0	15.0	15.0	15.4	15.0	15.0	13.0	12.0	12.0	20.3	20.3	20.3	13.0	13.0	13.0			
Milk, evaporated—16-ounce can	12.7	11.5	11.7	11.3	9.7	9.8	10.5	9.9	9.9	11.6	10.3	10.1	11.4	10.2	10.4			
Butter—pound	58.3	52.6	47.5	58.2	52.2	48.0	58.0	52.7	45.8	58.1	52.3	50.9	56.5	48.6	44.8			
Oleomargarine (all butter substitutes)—pound	27.8	27.4	27.5	25.4	25.5	24.5	28.5	27.7	27.0	28.7	27.5	26.6	25.4	24.6	24.4			
Cheese—do	42.1	41.6	40.8	34.0	33.2	32.2	42.5	40.3	39.9	34.9	34.3	33.2	37.1	37.1	36.6			
Lard—do	17.6	17.1	15.6	20.8	20.1	19.2	16.0	15.6	15.0	19.8	16.8	18.1	18.5	17.6	17.6			
Vegetable lard substitute—pound	26.7	26.3	26.0	16.2	16.4	16.1	26.8	26.6	26.6	21.3	21.7	21.2	25.7	25.5	25.6			
Eggs, strictly fresh—dozen	64.8	76.7	66.5	38.7	59.6	54.2	48.0	61.8	57.2	50.3	61.6	57.7	48.1	56.3	54.2			
Bread—pound	8.9	8.3	8.6	8.1	8.2	8.2	7.9	8.0	8.0	10.0	10.0	10.1	9.5	9.2	8.8			
Flour—do	5.5	5.6	5.5	4.9	4.8	4.8	5.1	5.1	5.0	6.1	5.8	5.6	4.8	4.9	5.0			
Corn meal—do	7.5	6.5	6.8	3.9	4.6	4.6	3.8	4.4	4.3	4.3	4.2	4.1	5.3	5.2	5.5			
Rolled oats—do	9.6	9.6	9.6	8.5	8.1	7.9	8.7	8.8	8.6	9.2	9.2	8.9	9.2	9.2	9.3			
Corn flakes—8-ounce package	9.9	9.7	9.5	9.0	9.1	9.2	9.1	9.4	9.4	9.6	9.5	9.6	9.7	9.7	9.7			
Wheat cereal—28-ounce package	25.0	24.6	24.9	25.6	25.6	25.9	25.2	25.2	26.6	25.2	25.1	25.1	26.4	27.2	27.2			
Macaroni—pound	23.7	25.4	23.5	18.5	17.9	17.8	19.0	18.5	18.5	18.3	19.1	19.0	20.2	19.6	20.1			
Rice—do	10.9	10.8	10.8	7.1	7.2	7.3	11.1	10.2	10.8	7.5	7.5	7.3	9.2	9.3	9.4			
Beans, navy—do	13.2	13.8	13.1	13.3	14.2	13.6	13.7	11.9	11.8	13.7	13.9	13.1	14.4	12.8	11.9			
Potatoes—do	1.9	3.6	3.7	3.8	5.2	5.0	2.0	3.5	3.7	2.9	4.2	4.4	2.1	3.8	4.0			
Onions—do	8.4	4.9	5.3	7.7	5.2	5.2	8.0	5.4	5.4	8.8	6.2	5.7	8.7	6.5	6.9			
Cabbage—do	7.2	4.9	6.1	5.3	5.1	5.3	5.7	4.9	4.8	4.8	4.2	4.6	7.1	4.3	5.1			
Pork and beans—No. 2 can	12.3	12.4	12.4	11.1	10.5	10.0	11.1	11.1	10.7	10.7	10.0	9.8	12.4	12.5	12.1			
Corn, canned—do	16.8	16.7	16.2	14.4	13.9	13.7	15.2	14.1	13.9	16.8	17.3	16.7	14.9	14.9	15.6			
Peas, canned—do	19.4	18.4	18.1	15.7	15.5	15.2	15.8	14.8	14.5	17.1	18.6	19.4	15.6	16.3	17.0			
Tomatoes, canned—No. 2 can	13.3	12.5	13.0	10.5	10.4	10.4	13.5	13.5	13.4	11.1	9.6	9.7	12.5	13.2	13.2			
Sugar, granulated—pound	6.8	6.4	6.3	6.7	6.6	6.5	7.3	7.1	6.9	6.8	6.7	6.3	7.0	7.1	7.0			
Tea—do	58.2	59.1	58.2	85.2	88.6	88.8	90.0	90.3	90.7	94.9	95.7	92.1	92.8	89.1	92.5			
Coffee—do	49.6	48.8	46.5	44.8	39.7	35.7	48.2	46.4	45.1	47.2	45.4	43.7	52.4	48.8	45.4			
Prunes—do	13.5	16.9	16.6	13.4	16.9	17.4	17.1	20.7	21.1	14.3	17.8	18.2	14.4	20.2	20.3			
Raisins—do	12.1	12.5	12.6	10.7	10.3	10.4	13.5	14.3	13.9	12.3	12.3	12.3	12.6	13.8	13.6			
Bananas—dozen	10.0	9.2	9.7	25.4	25.7	24.6	31.3	31.3	31.1	30.0	26.9	27.1	11.1	10.5	10.1			
Oranges—do	45.4	44.0	49.3	41.5	35.2	38.1	48.6	43.5	42.0	17.8	33.7	33.0	48.5	40.0	47.7			

<sup>1</sup> Per pound.<sup>2</sup> The steak for which prices are here quoted is called "rump" in this city, but in most of the other cities included in this report it would be known as "porterhouse" steak.

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Continued

Article	Little Rock, Ark.				Los Angeles, Calif.				Louisville, Ky.				Manchester, N. H.				Memphis, Tenn.			
	1929		Jan. 15	Dec. 15	1929		Jan. 15	Dec. 15	1929		Jan. 15	Dec. 15	1929		Jan. 15	Dec. 15	1929		Jan. 15	Dec. 15
	Cts.	Cts.			Cts.	Cts.			Cts.	Cts.			Cts.	Cts.			Cts.	Cts.		
Sirloin steak... pound	44.0	47.0	47.3	45.6	44.6	44.7	43.3	44.1	44.3	64.2	61.5	61.5	46.3	48.3	47.9					
Round steak... do	39.4	43.5	43.9	38.6	37.8	37.9	37.5	38.6	39.1	52.5	51.3	52.1	42.2	44.9	44.1					
Rib roast... do	34.3	35.9	35.7	35.1	35.5	35.1	31.8	32.5	32.7	34.3	33.8	34.0	33.7	34.7	34.3					
Chuck roast... do	28.8	29.8	28.7	28.0	26.9	27.5	26.9	26.1	26.2	29.7	28.9	28.8	27.6	28.9	29.1					
Plate beef... do	22.1	23.7	24.5	21.0	18.5	19.0	22.4	22.5	22.7	21.9	21.2	20.7	21.3	22.4	22.5					
Pork chops... do	31.6	34.5	35.0	41.2	39.3	41.8	28.3	28.6	30.5	31.8	31.8	33.4	29.3	30.9	32.5					
Bacon, sliced... do	42.1	44.5	43.3	49.7	47.3	47.1	43.3	42.5	41.8	36.7	37.5	37.0	36.5	35.0	34.8					
Ham, sliced... do	50.9	51.0	51.4	67.2	65.9	66.3	49.6	49.1	48.2	45.2	45.3	45.4	51.9	51.9	50.9					
Lamb, leg of... do	38.6	38.0	37.5	37.7	36.9	37.0	37.6	40.8	41.3	40.2	36.9	39.0	37.3	38.3	38.1					
Hens... do	31.9	30.0	31.9	46.2	44.0	44.5	39.0	36.5	38.0	42.9	41.7	41.8	34.2	33.0	34.5					
Salmon, canned, red																				
Milk, fresh... quart	33.0	32.6	32.6	30.4	30.1	30.4	30.1	30.3	30.1	29.9	31.0	30.6	35.9	34.4	33.8					
Milk, evaporated	15.0	15.0	14.0	15.0	15.0	15.0	13.0	13.0	13.0	15.0	15.0	15.0	15.0	15.0	15.0					
Butter... pound	11.9	10.9	10.7	10.0	9.7	9.7	11.8	10.6	10.5	12.6	12.1	11.9	11.6	10.3	10.2					
Oleomargarine (all butter substitutes)	57.7	53.0	49.5	54.2	48.9	43.2	59.8	53.9	47.6	59.6	51.8	46.3	58.5	51.9	48.7					
Cheese... pound	28.1	24.9	25.3	25.3	21.0	20.7	27.9	25.1	26.0	28.6	27.0	28.5	26.0	25.0	24.4					
Lard... do	37.0	35.7	36.3	38.4	38.1	37.7	37.5	36.7	36.7	38.6	38.1	38.3	35.6	35.0	35.0					
Vegetable lard substitute... pound	20.0	18.9	18.2	20.4	18.1	18.2	17.2	16.8	16.5	17.8	17.2	16.6	16.7	14.2	14.1					
Eggs, strictly fresh																				
Bread... dozen	45.9	58.8	55.8	49.2	53.0	48.6	46.3	65.5	53.1	57.4	66.8	60.5	44.9	54.7	52.1					
Flour... do	9.7	9.5	9.3	8.6	8.5	8.7	9.2	8.6	8.6	8.5	8.1	8.1	9.4	9.2	9.1					
Corn meal... do	6.1	5.8	5.9	4.8	4.7	4.7	6.1	5.8	5.8	4.9	5.1	5.2	6.0	5.9	5.8					
Rolled oats... do	4.3	4.0	4.1	5.8	5.6	5.7	4.1	4.0	4.0	5.3	5.6	5.5	3.9	4.0	4.0					
Corn flakes																				
Wheat cereal	9.8	9.8	10.0	9.4	9.6	9.4	9.4	9.5	9.5	9.0	9.3	9.2	9.7	9.7	9.8					
Macaroni... pound	27.6	27.3	27.3	25.0	25.1	25.1	26.6	26.6	27.6	25.4	25.6	25.6	25.8	25.8	26.7					
Rice... do	20.1	20.2	20.8	17.9	17.1	17.1	18.8	18.7	18.4	23.2	23.4	23.4	19.6	19.2	19.7					
Beans, navy... do	8.0	8.4	8.2	10.0	9.6	9.2	10.5	10.1	10.2	8.5	8.6	9.2	8.4	9.0	8.6					
Potatoes... do	13.4	14.1	13.5	12.7	12.9	12.9	13.0	10.5	10.6	12.6	13.2	12.0	13.3	12.1	12.8					
Onions... do	3.0	4.2	4.3	2.5	3.9	4.3	2.2	3.5	3.6	1.8	3.2	3.6	2.9	4.0	4.5					
Cabbage... do	8.6	5.2	5.6	7.1	4.3	4.4	8.5	4.9	5.0	8.0	4.9	4.9	7.4	5.2	5.2					
Pork and beans																				
No. 2 can	6.4	4.8	5.7	5.5	4.4	4.5	6.4	4.5	5.7	5.5	4.2	5.1	5.7	4.2	5.1					
Corn, canned... do	11.8	12.2	11.9	11.3	11.4	11.3	11.3	11.1	10.9	13.4	13.6	13.8	11.6	11.5	11.2					
Peas, canned... do	15.3	16.5	16.9	16.3	15.4	14.8	15.3	15.1	14.7	16.5	16.2	15.9	14.7	14.7	14.4					
Tomatoes, canned																				
No. 2 can	18.2	17.7	19.0	16.6	15.9	15.9	15.4	15.0	15.0	17.6	17.5	17.6	15.4	15.8	15.6					
Sugar, granulated																				
Tea... do	11.5	13.3	12.9	14.8	14.8	14.6	11.6	11.0	10.8	12.4	12.6	12.7	10.6	11.0	11.0					
Coffee... do	7.3	7.5	7.6	6.3	6.1	6.2	7.3	7.4	7.4	6.9	6.8	6.8	6.8	6.6	6.6					
Prunes... do	104.9	104.6	102.9	74.9	72.7	75.6	94.2	91.2	91.2	64.5	60.8	60.4	96.0	94.8	94.8					
Raisins... do	54.1	52.9	49.3	53.9	51.5	48.9	50.2	45.4	42.9	50.8	48.2	44.3	48.9	47.4	45.4					
Bananas... dozen	14.0	14.3	14.4	10.4	11.0	11.0	11.7	13.0	12.8	10.9	11.5	11.7	12.8	13.3	13.8					
Oranges... do	2.9.1	2.6.8	2.7.2	2.8.9	2.8.7	2.8.5	2.10.0	2.9.5	2.9.8	2.9.9	2.9.3	2.9.0	2.9.3	2.8.2	2.7.4					
	57.1	46.0	51.5	45.3	40.4	44.4	33.8	41.2	39.3	47.8	43.5	51.9	31.2	38.0	39.7					

<sup>1</sup> The steak for which prices are here quoted is called "sirloin" in this city, but in most of the other cities included in this report it would be known as "porterhouse" steak.

<sup>2</sup> Per pound.

<sup>3</sup> No. 2½ can.

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Continued

Article	Milwaukee, Wis.				Minneapolis, Minn.				Mobile, Ala.				Newark, N. J.				New Haven, Conn.		
	1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929		Jan. 15, 1930		1929		
	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	
Sirloin steak, pound	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	
44.5	45.3	45.5	43.4	42.4	43.0	42.5	43.7	44.4	51.7	52.1	51.9	62.3	63.0	62.0					
Round steak, do	40.3	41.2	41.4	38.2	38.4	38.9	40.4	42.0	42.2	48.8	49.3	49.0	52.4	53.2	53.2				
Rib roast, do	33.1	32.3	33.4	32.5	33.8	34.5	33.8	34.2	33.9	39.3	40.0	40.2	41.5	42.3	41.6				
Chuck roast, do	30.9	30.7	31.3	28.1	29.6	29.5	26.3	28.1	28.3	31.5	32.7	30.9	34.4	34.4	33.7				
Plate beef, do	20.5	19.5	20.0	19.6	18.9	19.2	21.5	21.1	21.4	19.3	19.3	19.0	19.2	19.3	19.6				
Pork chops, do	29.7	30.9	35.0	32.1	34.1	35.6	32.5	31.1	31.1	32.2	35.1	34.6	32.9	35.0	36.3				
Bacon, sliced, do	43.6	43.2	43.4	46.1	45.4	44.8	41.5	37.8	39.0	42.4	43.7	42.9	45.5	44.3	44.9				
Ham, sliced, do	48.8	48.4	48.1	53.8	51.6	52.7	48.9	51.1	51.1	55.3	55.2	54.3	60.0	58.8	59.7				
Lamb, leg of, do	41.4	38.2	40.1	37.2	33.4	34.9	43.8	44.2	45.8	40.3	38.2	39.3	39.8	40.0	40.2				
Hens, do	38.1	31.6	35.0	36.8	33.3	35.6	35.0	34.2	34.7	40.3	37.4	38.7	41.3	41.2	41.5				
Salmon, canned, red pound	36.3	34.8	32.8	34.2	35.3	35.3	29.4	29.9	30.0	30.0	29.8	29.8	33.2	31.6	31.0				
Milk, fresh, quart	11.0	12.0	12.0	12.0	12.0	12.0	18.0	18.0	18.0	16.0	16.0	16.0	16.0	16.0	16.0				
Milk, evaporated 16-ounce can	11.2	10.4	10.1	11.6	10.9	10.8	11.3	10.3	10.0	11.0	10.3	10.1	12.0	11.4	11.1				
Butter, pound	54.9	46.9	42.3	54.4	47.8	42.8	57.8	51.2	48.8	59.3	54.2	47.4	59.0	53.9	50.6				
Oleomargarine (all butter substitutes) pound	26.7	27.1	25.6	26.1	25.4	25.3	28.9	27.2	26.9	30.0	30.8	30.3	29.1	28.9	27.8				
Cheese, do	37.5	36.6	36.1	37.7	37.1	36.9	35.0	34.8	34.1	41.3	40.6	40.6	41.7	41.7	42.0				
Lard, do	18.8	17.8	17.2	19.4	18.5	17.8	18.6	17.3	16.9	18.1	17.4	17.4	18.8	18.4	17.9				
Vegetable lard substitu- te, pound	26.2	26.4	26.2	26.3	26.4	26.4	20.1	18.5	19.2	25.5	24.8	25.0	25.9	26.3	26.1				
Eggs, strictly fresh dozen	46.3	57.0	49.6	39.9	55.4	45.9	45.5	56.4	50.8	60.1	72.8	63.4	66.7	77.8	68.9				
Bread, pound	8.7	8.4	8.2	8.9	8.9	8.8	10.1	9.9	9.9	9.1	9.0	8.8	8.8	8.6	8.5				
Flour, do	4.4	4.5	4.6	4.5	4.7	4.8	6.0	5.7	5.7	4.7	4.9	5.0	5.0	5.3	5.3				
Corn meal, do	6.2	6.3	6.3	5.5	5.6	5.6	3.9	3.9	3.9	6.7	6.5	6.5	6.9	7.1	7.0				
Rolled oats, do	7.9	8.0	8.1	7.9	8.0	8.0	8.5	8.1	8.0	8.7	8.6	8.6	9.2	9.0	9.6				
Corn flakes 8-ounce package	9.2	9.3	9.5	9.7	9.4	9.2	9.3	9.0	8.9	8.8	8.9	8.9	8.9	10.0	10.0	9.9			
Wheat cereal 28-ounce package	24.4	24.7	24.4	25.4	25.1	24.7	24.2	23.8	24.3	26.2	26.3	26.3	24.9	24.4	24.7				
Macaroni, pound	17.5	17.3	17.3	17.2	18.0	17.8	21.3	20.8	20.4	21.5	21.3	21.3	22.2	21.8	21.8				
Rice, do	9.8	9.6	9.8	9.9	9.6	10.0	7.8	7.5	7.4	9.1	9.0	9.0	10.3	10.2	10.2				
Beans, navy, do	13.5	13.1	12.5	13.8	13.2	12.9	12.5	13.7	13.0	13.2	14.3	13.9	12.2	13.2	12.8				
Potatoes, do	1.7	3.3	3.5	1.5	3.1	3.2	2.9	4.3	4.3	2.5	4.0	4.3	2.1	3.7	3.9				
Onions, do	7.7	4.6	4.7	8.3	5.0	5.1	6.9	4.8	4.5	8.0	5.1	5.4	8.0	6.0	6.0				
Cabbage, do	6.4	3.8	4.2	4.7	3.9	4.8	4.1	4.7	5.1	6.3	5.0	5.0	5.8	5.5	5.5				
Pork and beans No. 2 can	11.6	11.0	10.6	12.0	11.8	12.2	10.5	10.3	10.2	10.8	10.7	10.7	11.9	12.0	11.9				
Corn, canned, do	16.1	16.2	15.7	15.4	14.8	14.3	14.9	14.1	14.4	16.4	16.1	15.2	18.4	18.1	18.0				
Peas, canned, do	16.0	15.8	15.9	16.1	15.1	14.5	15.2	15.1	15.4	17.1	17.0	16.7	21.1	20.1	19.8				
Tomatoes, canned No. 2 can	13.3	14.3	14.4	13.1	14.2	13.8	10.5	10.8	10.8	11.1	10.9	10.9	14.1	14.2	14.6				
Sugar, granulated pound	6.4	6.3	6.4	6.8	6.7	6.6	6.5	6.3	6.4	6.4	6.2	6.2	6.6	6.7	6.6				
Tea, do	68.6	71.2	72.0	69.4	69.7	69.5	80.8	78.6	78.7	57.3	58.2	58.2	60.3	58.1	60.8				
Coffee, do	45.6	42.7	39.5	53.1	49.5	47.9	48.3	45.2	42.6	49.8	46.4	43.2	51.6	48.2	45.8				
Prunes, do	14.5	18.7	18.9	14.9	19.1	18.9	12.7	17.2	18.0	14.0	17.1	17.8	14.4	17.6	18.0				
Raisins, do	12.3	12.8	12.9	12.2	13.3	12.8	10.3	11.3	11.8	11.2	11.9	11.6	12.4	12.2	12.2				
Bananas, dozen	19.8	8.9	8.7	11.6	10.2	10.4	22.5	20.0	20.0	37.5	37.5	37.5	33.7	30.8	32.7				
Oranges, do	52.9	45.1	48.3	47.2	44.6	51.5	35.7	38.5	43.1	49.1	49.9	52.8	53.0	49.5	47.3				

<sup>1</sup> Per pound.

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Continued

Article	New Orleans, La.				New York, N. Y.				Norfolk, Va.				Omaha, Nebr.				Peoria, Ill.			
	1929		1930		1929		1930		1929		1930		1929		1930		1929		1930	
	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15
Sirloin steak—pound	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.		
Round steak—do	42.5	45.2	45.1	52.6	52.3	52.0	47.1	46.5	46.4	44.4	44.7	44.6	38.1	39.7	41.1					
Rib roast—do	38.0	40.0	39.8	49.5	49.5	49.5	40.9	40.6	41.3	41.6	42.6	42.7	37.8	39.0	40.8					
Chuck roast—do	35.4	36.7	37.0	43.7	42.6	42.5	40.4	39.4	37.2	31.7	33.4	33.1	30.2	29.8	31.8					
Plate beef—do	25.6	26.4	27.7	31.0	31.0	31.4	29.3	27.0	27.6	28.1	28.8	29.3	27.3	27.4	27.8					
Pork chops—do	22.6	23.3	23.3	25.0	25.6	25.2	21.4	21.0	22.3	18.9	19.0	19.0	19.5	18.8	19.3					
Bacon, sliced—do	32.5	34.4	35.7	35.9	37.0	38.1	30.3	32.8	32.9	29.7	32.0	32.2	27.9	31.5	32.5					
Ham, sliced—do	41.6	43.1	42.1	44.6	44.4	44.9	40.7	40.5	41.1	43.5	43.9	43.3	43.8	43.2	43.2					
Lamb, leg of—do	39.4	39.2	39.8	39.2	36.6	48.5	40.0	39.7	42.2	36.9	36.0	36.3	42.0	42.1	42.9					
Hens—do	38.9	37.4	39.5	40.0	39.4	39.4	38.4	38.5	38.6	33.7	30.4	31.1	35.8	32.3	32.8					
Salmon, canned red—pound	35.6	35.1	36.8	31.1	31.2	30.9	33.9	33.4	32.9	34.0	33.9	33.6	34.2	33.0	33.4					
Milk, fresh—quart	14.0	14.0	13.3	16.0	16.0	16.0	18.0	18.0	18.0	11.3	11.3	11.3	13.0	13.0	13.0					
Milk, evaporated—16-ounce can	11.0	10.0	10.0	10.9	10.2	10.1	11.5	10.5	10.3	11.7	10.2	10.2	11.3	9.8	9.8					
Butter—pound	59.7	53.0	49.7	58.3	52.3	45.8	60.9	55.4	52.5	54.9	45.3	40.7	53.4	47.0	43.6					
Oleomargarine (all butter substitutes)—pound	28.6	27.3	27.0	28.8	27.9	27.5	26.9	26.5	26.6	26.5	25.2	25.7	27.3	27.2	26.8					
Cheese—do	38.7	36.7	36.4	40.7	40.2	39.4	35.2	35.3	34.8	35.4	35.4	33.5	36.8	35.8	34.7					
Lard—do	18.7	18.1	17.2	19.2	18.7	17.6	18.5	17.6	16.9	19.7	18.2	19.3	18.2	17.6	16.8					
Vegetable lard substitute—pound	20.1	19.9	21.2	25.8	25.2	25.5	21.5	21.8	21.9	25.6	25.3	26.0	27.6	27.6	27.4					
Eggs, strictly fresh—dozen	46.6	58.1	52.4	61.7	74.7	63.8	48.2	63.2	56.1	41.7	53.4	48.2	46.9	59.9	50.8					
Bread—pound	8.8	8.7	8.7	8.6	8.6	9.9	9.9	9.3	8.9	9.7	9.2	9.2	10.0	10.0	10.1					
Flour—do	6.7	6.5	6.4	4.9	5.0	4.9	5.3	5.4	5.4	4.2	4.3	4.3	4.6	4.8	4.8					
Corn meal—do	4.1	4.1	4.1	6.7	6.7	6.4	4.7	4.8	4.8	4.8	4.8	4.7	4.9	4.9	4.9					
Rolled oats—do	8.6	8.5	8.5	8.6	8.6	8.5	8.8	8.6	8.8	10.0	9.5	9.7	8.6	8.5	8.5					
Corn flakes—8-ounce package	9.5	9.4	9.3	9.0	9.2	8.9	9.7	9.6	9.6	9.7	9.8	9.8	9.6	9.5	9.5					
Wheat cereal—28-ounce package	25.3	24.9	24.8	24.4	24.0	23.6	25.5	24.9	24.9	27.6	27.4	27.3	25.7	25.7	25.5					
Macaroni—pound	10.8	11.0	11.2	20.7	20.3	20.1	19.1	19.2	18.6	20.8	21.0	20.8	18.4	18.7	18.7					
Rice—do	8.5	8.6	8.4	9.9	9.4	9.3	10.9	10.0	11.0	10.3	10.0	9.9	9.5	9.2	9.0					
Beans, navy—do	12.7	12.8	11.9	14.3	15.0	14.7	13.0	12.0	11.9	13.4	12.6	12.7	13.8	12.8	12.2					
Potatoes—do	3.0	4.3	4.4	2.6	4.1	4.2	2.7	4.4	4.7	1.8	3.2	3.7	1.9	3.4	3.6					
Onions—do	6.7	4.6	4.5	7.4	5.2	5.2	7.3	5.5	5.2	7.7	4.9	4.9	8.2	5.6	5.6					
Cabbage—do	5.1	4.6	4.7	5.0	5.3	6.2	4.9	5.0	5.2	5.7	4.5	5.3	6.3	4.0	5.0					
Pork and beans—No. 2 can	11.0	10.7	10.6	11.6	11.5	11.0	10.6	10.1	9.7	13.0	13.1	13.1	10.6	10.5	10.7					
Corn, canned—do	15.3	15.2	14.8	15.1	15.1	15.3	15.1	15.5	14.6	16.1	15.5	15.0	14.6	13.9	14.3					
Peas, canned—do	17.6	15.5	15.7	15.9	15.1	15.2	17.5	17.9	16.9	15.5	14.8	14.6	17.4	17.0	16.3					
Tomatoes, canned—No. 2 can	11.3	11.4	11.2	11.9	11.1	11.4	10.9	10.3	10.3	13.5	14.5	14.3	12.3	12.6	13.1					
Sugar, granulated—pound	6.1	5.9	5.9	6.1	5.9	5.9	6.7	6.5	6.5	7.1	7.0	6.9	7.5	7.3	7.2					
Tea—do	83.8	81.5	77.5	67.3	67.2	66.8	94.7	93.3	93.3	78.7	80.0	80.6	66.1	64.1	62.5					
Coffee—do	35.1	33.9	33.3	45.4	41.2	38.0	50.9	46.1	42.0	53.6	52.8	48.6	49.3	45.5	44.2					
Prunes—do	13.8	19.1	18.4	13.2	17.3	17.2	13.7	17.4	18.1	14.8	18.8	18.9	16.6	18.8	19.8					
Raisins—do	10.1	11.2	11.0	11.6	12.7	12.6	11.4	12.2	11.9	13.3	13.8	13.7	12.8	13.6	13.4					
Bananas—dozen	17.0	18.0	18.0	39.4	37.5	36.7	33.2	32.3	32.5	12.3	11.8	11.6	10.6	9.8	10.0					
Oranges—do	43.6	49.2	45.7	58.5	57.3	57.4	48.0	51.6	48.0	42.5	37.2	50.5	45.8	39.2	46.4					

<sup>2</sup> Per pound.

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Continued

Article	Philadelphia, Pa.				Pittsburgh, Pa.				Portland, Me.				Portland, Oreg.	
	1929		1929		1929		1929		1929		1929		1929	
	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Jan. 15, 1930
Sirloin steak.....pound..	162.2	162.7	162.5	54.7	52.3	53.0	169.8	168.2	167.8	36.5	37.1	37.3		
Round steak.....do.....	48.9	49.6	49.4	45.6	44.6	45.2	53.3	51.6	51.5	34.3	35.2	35.3		
Rib roast.....do.....	41.4	42.4	42.4	40.8	38.5	39.2	36.5	34.8	35.2	29.4	30.3	30.5		
Chuck roast.....do.....	33.8	34.0	33.7	31.9	31.1	32.4	28.2	27.2	26.8	25.7	25.0	25.7		
Plate beef.....do.....	19.5	19.2	19.4	20.2	19.5	19.9	25.2	25.2	24.6	20.3	19.4	20.2		
Pork chops.....do.....	34.5	36.4	37.5	53.3	35.0	36.7	32.9	33.8	35.8	35.1	36.3	36.6		
Bacon, sliced.....do.....	41.7	41.9	42.1	47.6	46.0	46.2	40.2	37.9	38.0	50.0	50.1	50.0		
Ham, sliced.....do.....	57.0	55.4	55.5	59.2	57.7	57.1	52.6	50.5	51.2	53.4	53.2	53.1		
Lamb, leg of.....do.....	42.8	39.5	41.4	42.6	39.8	41.5	41.0	37.5	38.0	37.8	35.2	36.1		
Hens.....do.....	41.9	39.5	39.8	48.0	44.6	45.1	42.0	40.8	40.9	36.5	35.8	37.3		
Salmon, canned, red.....do.....	29.0	29.1	29.2	29.5	29.9	30.4	29.8	30.3	30.6	33.2	32.8	32.8		
Milk, fresh.....quart.....	13.0	14.0	13.0	15.0	14.0	14.0	15.0	15.0	14.7	12.0	12.0	12.0		
Milk, evaporated.....16-ounce can.....	11.6	10.4	10.4	11.2	10.2	10.2	12.4	11.6	11.5	10.1	10.1	10.1		
Butter.....pound.....	61.5	56.5	49.7	59.1	52.0	47.2	60.5	53.5	50.0	55.3	51.4	44.5		
Oleomargarine (all butter substitutes).....pound.....	29.1	28.2	27.8	28.0	27.8	26.7	26.9	25.6	25.7	26.4	26.0	26.5		
Cheese.....do.....	42.2	42.2	42.9	41.8	40.4	39.8	39.5	38.9	38.3	38.2	38.2	37.9		
Lard.....do.....	17.7	16.8	16.4	19.1	17.2	16.4	17.8	16.4	15.9	19.9	19.4	19.9		
Vegetable lard substitute.....do.....	25.0	24.9	25.2	27.1	27.1	26.8	25.8	25.7	25.6	27.2	28.5	28.7		
Eggs, strictly fresh.....dozen.....	57.1	70.9	59.7	54.4	67.4	58.9	58.2	68.3	61.7	42.6	52.8	44.0		
Bread.....pound.....	8.3	8.3	8.3	8.9	8.9	8.8	9.2	9.0	9.0	9.3	9.3	9.2		
Flour.....do.....	4.6	4.8	4.9	4.6	4.8	4.8	5.0	5.2	5.2	4.7	4.8	4.8		
Corn meal.....do.....	5.3	5.6	5.8	6.0	6.4	6.3	5.4	5.3	5.3	5.9	6.2	5.9		
Rolled oats.....do.....	8.3	8.3	8.4	9.1	8.9	9.0	7.7	7.6	7.5	10.3	10.4	10.6		
Corn flakes.....8-ounce package.....	8.8	8.5	8.5	9.8	9.7	9.7	9.6	9.7	9.7	9.6	9.5	9.5		
Wheat cereal.....28-ounce package.....	24.6	24.6	24.6	24.8	25.3	25.2	25.8	26.0	25.8	26.8	27.2	27.0		
Macaroni.....pound.....	20.2	20.3	20.5	22.6	22.7	22.4	23.4	21.9	22.2	18.5	17.4	18.2		
Rice.....do.....	10.3	10.1	10.5	11.0	10.3	10.5	11.4	11.2	11.1	10.0	9.9	9.9		
Beans, navy.....do.....	13.0	13.5	13.1	13.5	12.6	12.3	13.0	12.9	12.6	13.0	13.3	13.2		
Potatoes.....do.....	2.3	4.3	4.4	2.2	3.7	3.9	1.8	3.3	3.5	2.1	3.8	3.6		
Onions.....do.....	7.3	4.4	4.8	7.9	5.9	6.0	7.9	4.5	5.2	6.6	3.2	3.8		
Cabbage.....do.....	5.7	4.5	4.9	5.9	4.7	5.7	4.6	3.2	3.5	5.8	3.6	4.8		
Pork and beans.....No. 2 can.....	11.4	10.6	10.5	13.3	12.3	12.1	15.2	15.5	16.2	12.5	13.0	13.1		
Corn, canned.....do.....	15.3	14.7	14.7	16.3	15.9	15.5	14.3	14.3	14.4	18.0	19.1	18.6		
Peas, canned.....do.....	15.8	15.7	16.2	16.7	16.5	16.2	17.8	17.5	17.0	17.5	18.2	17.7		
Tomatoes, canned.....do.....	12.1	12.1	12.6	13.1	13.1	13.0	12.2	12.4	12.0	14.8	15.5	15.2		
Sugar, granulated.....pound.....	6.1	5.9	5.9	7.1	6.9	6.9	6.7	6.3	6.4	6.7	6.7	6.8		
Tea.....pound.....	70.5	72.5	73.4	81.7	86.6	85.3	61.5	62.5	62.5	77.8	78.1	79.0		
Coffee.....do.....	43.7	40.1	38.1	50.2	47.9	44.7	52.8	48.0	46.9	53.4	50.4	48.8		
Prunes.....do.....	12.8	16.3	16.8	14.5	18.5	19.0	12.2	17.2	17.5	13.6	13.8	13.6		
Raisins.....do.....	10.6	11.6	11.4	11.8	12.5	12.7	10.9	11.3	11.3	11.1	12.1	11.7		
Bananas.....dozen.....	31.4	28.4	29.3	41.1	36.1	38.7	11.5	10.6	10.4	11.1	11.5	11.1		
Oranges.....do.....	40.5	42.5	44.0	46.1	41.1	45.4	47.7	48.4	48.8	42.4	30.3	39.8		

<sup>1</sup> The steak for which prices are here quoted is called "sirloin" in this city, but in most other cities included in this report it would be known as "porterhouse" steak.

<sup>2</sup> Per pound.

<sup>3</sup> No. 2½ can.

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Continued

Article	Providence, R. I.				Richmond Va.				Rochester, N. Y.				St. Louis, Mo.			
	1929		1930		1929		1930		1929		1930		1929		1930	
	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15
Sirloin steak.....pound.....	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Sirloin steak.....pound.....	79.2	80.8	81.1	46.7	49.8	50.0	45.5	47.0	46.6	45.0	46.4	46.9				
Round steak.....do.....	57.0	59.4	60.1	42.1	44.7	44.1	39.0	41.7	41.9	43.1	45.3	46.1				
Rib roast.....do.....	44.2	44.0	45.5	34.8	35.6	36.8	35.5	35.4	35.1	36.3	37.1	36.9				
Chuck roast.....do.....	35.1	36.5	36.7	26.6	28.0	29.8	30.2	31.0	30.2	28.4	29.4	29.3				
Plate beef.....do.....	25.0	29.0	26.7	21.0	22.1	22.5	19.2	19.5	18.9	21.1	22.1	22.5				
Pork chops.....do.....	34.6	37.1	38.4	30.9	32.8	33.6	32.2	35.9	36.9	28.6	30.1	32.5				
Bacon, sliced.....do.....	40.8	40.7	41.1	39.9	37.1	37.8	37.4	37.4	37.2	39.7	40.6	40.8				
Ham, sliced.....do.....	54.3	56.2	57.3	45.1	41.2	43.1	52.0	51.9	52.5	53.3	52.2	52.6				
Lamb, leg of.....do.....	42.6	39.4	41.7	44.0	43.5	42.2	39.7	35.8	37.9	39.4	37.2	38.1				
Hens.....do.....	42.1	42.8	42.3	38.4	34.6	38.5	40.9	39.3	39.5	37.5	35.0	36.6				
Salmon, canned, red.....do.....	30.5	31.1	31.0	33.0	33.1	32.3	31.6	30.7	31.3	32.6	32.7	33.1				
Milk, fresh.....quart.....	15.7	15.7	15.8	14.0	14.0	14.0	13.5	14.0	14.0	13.0	13.0	13.0				
Milk, evaporated.....16-ounce can.....	11.8	10.8	10.8	12.4	11.8	11.8	11.3	10.3	10.3	10.9	9.6	9.6				
Butter.....pound.....	57.9	52.4	48.9	62.6	53.5	50.2	58.4	50.8	46.1	60.0	51.5	47.6				
Oleomargarine (all butter substitutes).....pound.....	26.6	25.9	25.8	29.9	29.7	29.8	28.6	26.7	26.9	26.6	25.8	25.0				
Cheese.....do.....	39.0	39.1	39.1	36.6	35.3	35.4	39.8	38.6	38.6	37.8	36.1	35.9				
Lard.....do.....	17.7	16.9	16.7	18.6	16.3	16.5	17.1	16.6	15.7	14.8	13.6	13.4				
Vegetable lard substitute.....do.....	26.2	25.6	26.0	25.1	24.9	23.9	25.6	25.4	24.3	25.5	24.8	25.0				
Eggs, strictly fresh.....dozen.....	61.4	71.5	62.6	45.4	59.7	50.7	54.0	64.3	55.5	46.6	58.9	53.2				
Bread.....pound.....	9.0	8.9	8.7	8.5	8.6	8.6	8.7	8.3	8.3	9.4	9.0	9.1				
Flour.....do.....	5.1	5.4	5.5	5.2	5.2	5.1	5.0	5.0	5.0	4.8	4.9	4.9				
Corn meal.....do.....	5.1	5.1	5.2	4.9	4.7	4.7	5.9	5.9	5.9	4.5	4.6	4.8				
Rolled oats.....do.....	9.0	8.9	9.0	8.7	8.7	8.8	9.4	8.4	8.1	8.1	8.1	8.1				
Corn flakes.....8-ounce package.....	9.5	9.4	9.3	9.6	9.8	9.6	9.2	9.3	9.3	9.0	9.4	9.4				
Wheat cereal.....28-ounce package.....	24.8	24.6	24.8	26.0	25.9	25.8	25.6	24.9	25.0	24.6	24.2	24.4				
Macaroni.....pound.....	22.8	23.1	22.9	20.0	20.2	19.4	19.9	20.2	21.3	20.0	19.1	20.1				
Rice.....do.....	10.0	9.6	9.7	11.0	10.7	10.1	9.0	9.1	8.9	10.1	9.4	9.5				
Beans, navy.....do.....	12.8	13.4	13.1	13.9	12.6	12.6	13.3	13.2	12.9	11.9	11.3					
Potatoes.....do.....	1.9	3.4	3.5	2.7	4.1	4.5	1.5	3.0	3.0	2.5	4.0	4.1				
Onions.....do.....	7.6	5.2	5.1	8.0	4.6	5.1	6.3	4.3	4.5	7.4	5.3	5.2				
Cabbage.....do.....	6.7	4.9	6.0	6.5	4.5	4.9	4.5	3.1	4.1	5.1	4.2	4.6				
Pork and beans.....No. 2 can.....	11.4	11.4	11.2	11.1	10.7	9.8	10.7	10.8	10.3	10.4	10.3	10.2				
Corn, canned.....do.....	17.2	16.3	16.3	15.2	15.3	14.9	16.5	15.3	15.3	15.5	14.9	14.3				
Peas, canned.....do.....	17.9	17.6	17.9	17.4	17.9	16.5	17.4	16.8	16.3	14.9	14.8	14.8				
Tomatoes, canned.....do.....	13.5	12.9	13.0	11.3	11.5	10.7	14.6	15.5	15.3	11.5	12.3	12.3				
Sugar granulated.....pound.....	6.4	6.2	6.1	6.7	6.4	6.5	6.2	6.0	6.1	6.8	6.6	6.6				
Tea.....do.....	59.8	59.1	60.4	90.6	94.5	94.8	70.9	71.9	71.5	75.5	73.3	71.7				
Coffee.....do.....	51.3	48.3	46.3	47.9	45.3	42.8	48.2	41.0	38.6	46.8	41.5	39.5				
Prunes.....do.....	13.5	16.2	16.9	15.1	18.3	17.6	13.6	19.7	19.3	15.1	19.1	19.6				
Raisins.....do.....	12.5	11.9	11.7	11.2	12.1	12.7	12.2	12.5	12.3	11.3	12.1	12.2				
Bananas.....dozen.....	32.1	31.3	32.9	37.5	33.8	34.4	35.0	32.1	31.5	31.4	31.7	32.8				
Oranges.....do.....	54.4	50.7	53.5	37.9	39.2	41.3	54.7	55.5	51.6	49.9	44.4	45.1				

<sup>1</sup> The steak for which prices are here quoted is called "sirloin" in this city, but in most of the other cities included in this report it would be known as "porterhouse" steak.

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Continued

Article	St. Paul, Minn.			Salt Lake City, Utah			San Francisco, Calif.			Savannah, Ga.		
	1929		Jan. 15, 1930	1929		Jan. 15, 1930	1929		Jan. 15, 1930	1929		Jan. 15, 1930
	Jan. 15	Dec. 15		Jan. 15	Dec. 15		Jan. 15	Dec. 15		Jan. 15	Dec. 15	
Sirloin steak			Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Round steak	pound	40.7	40.9	40.6	37.5	36.8	36.9	41.2	40.1	42.2	40.0	40.9
Rib roast	do	35.8	36.2	36.6	37.1	36.2	36.8	39.8	38.2	39.9	33.6	36.4
Chuck roast	do	33.7	33.4	33.8	28.6	30.8	31.4	37.1	35.1	36.7	31.4	33.2
Plate beef	do	27.5	27.7	27.6	25.5	26.1	26.2	27.0	24.6	26.6	23.3	26.1
Pork chops	do	18.0	18.6	18.2	19.1	19.0	19.5	22.0	19.8	20.9	18.5	20.6
Bacon, sliced	do	30.2	30.6	32.5	34.6	35.8	36.7	38.5	41.3	41.7	27.5	31.8
Ham, sliced	do	42.0	40.8	42.1	43.3	43.7	43.1	55.0	55.9	56.7	37.0	38.8
Lamb, leg of	do	47.9	46.1	47.9	54.6	55.7	57.6	62.2	62.4	63.3	42.8	45.8
Hens	do	35.9	32.3	33.4	37.2	36.3	36.6	42.5	38.5	41.2	38.3	37.9
Salmon, canned, red	do	35.2	31.8	33.5	35.0	34.2	34.9	44.5	43.1	43.0	32.2	32.3
Milk, fresh	quart	34.6	36.9	36.5	33.8	32.9	33.6	28.0	29.7	30.0	33.0	32.6
Milk, evaporated	16-ounce can	12.0	12.0	12.0	10.0	10.0	10.0	14.0	14.0	14.0	17.5	18.0
Butter	pound	52.6	48.1	41.3	51.2	47.9	30.3	55.7	52.8	47.3	59.7	52.4
Oleomargarine (all butter substitutes)	pound	25.1	24.0	23.9	25.0	29.8	29.4	25.0	24.9	24.9	30.5	29.8
Cheese	do	36.8	35.4	34.9	30.5	29.8	29.5	39.1	41.1	41.5	35.3	32.8
Lard	do	19.0	17.7	17.0	20.3	19.6	18.9	22.4	22.2	22.0	19.3	18.3
Vegetable lard substitute	do	27.0	26.8	26.5	29.6	29.3	29.3	27.4	28.2	28.2	16.8	15.5
Eggs, strictly fresh	dozen	40.5	51.3	46.3	45.9	52.5	44.6	45.5	52.7	46.3	42.8	57.6
Bread	pound	9.3	9.3	9.3	9.7	9.5	9.5	9.3	9.3	9.2	10.7	10.4
Flour	do	4.7	5.0	5.0	3.6	3.7	3.7	5.2	5.1	5.2	6.4	6.2
Corn meal	do	5.3	5.5	5.4	5.7	6.0	6.2	7.1	7.2	7.3	3.7	3.5
Rolled oats	do	10.1	9.7	9.6	8.7	8.4	8.4	9.9	9.8	9.8	8.4	8.6
Corn flakes	8-ounce package	9.8	10.0	10.0	10.1	9.8	9.9	9.7	9.8	9.8	9.7	9.6
Wheat cereal	28-ounce package	26.2	26.1	26.3	25.1	25.1	25.4	25.4	25.3	25.3	24.4	24.0
Macaroni	pound	18.3	18.5	18.6	19.0	19.6	20.3	16.3	16.2	16.9	17.8	17.9
Rice	do	10.4	10.4	10.8	8.8	9.2	9.2	9.3	9.8	9.5	8.9	8.8
Beans, navy	do	13.8	13.8	13.2	11.9	11.6	11.1	11.9	13.3	13.0	13.5	14.5
Potatoes	do	1.4	2.8	2.9	1.5	2.7	2.7	2.8	4.2	4.5	2.8	4.1
Onions	do	7.9	4.6	4.4	5.2	2.9	3.0	6.1	4.3	4.2	7.8	5.2
Cabbage	do	4.0	4.0	4.1	5.3	3.2	3.4	—	—	—	5.5	4.3
Pork and beans	No. 2 can	14.0	13.4	13.7	12.5	12.9	12.8	12.4	12.4	12.4	11.0	10.8
Corn, canned	do	15.0	14.4	14.8	14.2	13.9	14.0	17.0	17.3	17.6	15.6	15.3
Peas, canned	do	15.2	14.6	14.7	15.1	14.8	14.6	18.2	17.7	17.8	17.0	16.7
Tomatoes, canned	do	14.5	14.5	14.7	13.4	13.8	13.5	15.2	16.1	15.9	10.7	9.9
Sugar, granulated	pound	7.1	7.0	7.0	7.0	6.0	7.0	6.3	6.7	6.3	6.4	6.0
Tea	do	71.3	70.7	70.0	85.4	84.7	84.7	71.8	74.1	75.9	80.9	82.1
Coffee	do	52.8	51.4	49.3	54.7	53.9	52.5	53.5	51.2	49.6	46.9	41.9
Prunes	do	13.9	18.2	18.7	13.1	17.5	16.7	11.4	15.7	16.7	12.4	18.8
Raisins	do	13.5	14.2	13.5	11.6	11.8	11.8	10.4	11.1	11.1	11.8	12.6
Bananas	dozen	11.6	10.7	11.3	12.8	10.2	10.6	30.9	30.7	30.7	30.5	30.0
Oranges	do	58.5	43.6	51.3	43.4	35.3	43.9	51.7	37.8	46.6	29.7	33.6

<sup>a</sup> Per pound.<sup>b</sup> No. 2½ can.

TABLE 5.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Continued

Article	Scranton, Pa.				Seattle, Wash.				Springfield, Ill.				Washington, D. C.			
	1929		1930		1929		1930		1929		1930		1929		1930	
	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15	Jan. 15	Dec. 15
Sirloin steak.....		pound.....	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Round steak.....	61.9	63.0	61.2	41.5	43.5	43.8	42.7	40.8	42.6	55.1	52.3	53.0	52.3	53.0	52.3	53.0
Round steak.....	51.8	53.3	52.8	38.3	38.8	38.5	42.7	40.8	42.6	48.3	46.6	47.8	46.6	47.8	46.6	47.8
Rib roast.....	43.2	41.5	41.7	34.3	34.1	34.3	31.2	31.9	31.8	39.1	38.8	38.2	38.8	38.2	38.8	38.2
Chuck roast.....	35.2	35.5	35.6	26.9	26.7	27.1	28.5	28.5	28.2	31.6	31.5	31.4	31.5	31.4	31.5	31.4
Plate beef.....	20.7	20.1	20.6	21.3	21.3	21.9	20.9	20.8	21.8	20.5	20.1	18.6	20.1	18.6	20.1	18.6
Pork chops.....	34.5	37.8	37.5	36.0	40.1	39.9	27.9	31.4	31.1	33.5	34.2	37.2	34.2	37.2	34.2	37.2
Bacon, sliced.....	47.4	46.3	46.4	55.1	52.8	53.0	42.3	40.5	40.5	39.7	38.6	40.2	38.6	40.2	38.6	40.2
Ham, sliced.....	58.8	58.2	57.7	59.5	57.6	59.0	49.5	47.7	48.6	58.0	56.5	58.1	56.5	58.1	56.5	58.1
Lamb, leg of.....	do.....	45.3	42.6	43.4	37.9	36.3	38.2	41.0	39.5	40.6	42.9	39.5	42.2	39.5	42.2	42.2
Hens.....	do.....	45.4	42.2	42.7	36.6	36.3	37.5	35.0	32.4	32.4	41.9	40.2	40.7	40.2	40.7	40.7
Salmon, canned, red.....	do.....	33.1	33.4	33.1	32.5	32.8	32.8	33.1	34.2	34.4	29.5	30.5	30.7	30.5	30.7	30.7
Milk, fresh.....	quart.....	13.0	14.0	14.0	12.0	13.0	12.0	14.4	14.4	14.4	15.0	14.8	15.0	14.8	15.0	15.0
Milk, evaporated.....	16-ounce can.....	11.9	11.3	11.3	10.4	10.0	10.0	12.0	10.3	9.8	11.8	11.1	11.3	11.1	11.3	11.3
Butter.....	pound.....	59.9	54.4	49.0	55.6	53.1	46.2	56.4	48.7	44.3	60.5	53.0	50.1	53.0	50.1	50.1
Oleomargarine (all butter substitutes).....	pound.....	27.3	26.8	26.0	24.9	24.7	24.5	28.5	27.5	27.5	26.9	26.0	25.3	26.0	25.3	25.3
Cheese.....	do.....	39.2	38.7	38.6	35.4	35.8	35.6	37.1	35.8	36.8	41.3	39.5	39.6	39.5	39.6	39.6
Lard.....	do.....	19.8	19.0	18.5	20.1	19.5	20.0	17.8	16.1	15.6	16.6	16.6	16.1	16.6	16.6	16.1
Vegetable lard substitute.....	do.....	25.8	26.4	26.5	27.2	25.8	26.3	28.0	27.0	27.1	24.5	24.6	24.6	24.5	24.6	24.6
Eggs, strictly fresh.....	dozen.....	58.8	71.0	60.3	42.9	54.4	46.6	46.9	63.3	54.3	54.9	66.9	58.6	58.6	66.9	58.6
Bread.....	pound.....	9.9	9.8	9.6	9.7	9.7	10.1	10.1	10.3	8.9	8.9	8.9	8.9	8.9	8.9	8.9
Flour.....	do.....	5.4	5.6	5.6	4.7	4.6	4.6	4.6	4.6	4.6	5.2	5.3	5.5	5.2	5.3	5.5
Corn meal.....	do.....	7.8	7.4	7.6	5.8	6.1	6.4	4.8	4.8	4.8	5.0	5.0	5.0	5.0	5.0	5.0
Rolled oats.....	do.....	9.8	9.9	9.7	9.2	9.7	10.1	9.6	9.7	9.7	8.9	8.9	9.0	8.9	8.9	9.0
Corn flakes.....	8-ounce package.....	9.9	9.8	9.8	9.8	9.7	9.4	9.5	9.3	9.3	8.9	8.9	9.1	8.9	9.1	9.1
Wheat cereal.....	28-ounce package.....	25.6	25.5	25.6	26.7	26.3	26.3	27.4	26.8	26.9	24.0	24.4	24.1	24.4	24.1	24.1
Macaroni.....	pound.....	23.3	22.8	22.7	17.8	17.5	17.6	19.0	18.8	18.8	21.8	21.6	21.2	21.6	21.2	21.2
Rice.....	do.....	10.4	10.1	10.0	10.3	10.1	9.8	10.6	9.8	9.2	10.8	10.7	10.6	10.7	10.6	10.6
Beans, navy.....	do.....	12.5	14.0	13.9	13.3	13.7	13.2	13.8	11.9	11.7	13.0	12.5	12.2	12.5	12.2	12.2
Potatoes.....	do.....	1.7	3.6	3.5	2.1	3.4	3.3	2.1	3.5	3.8	2.4	4.0	4.0	4.0	4.0	4.0
Onions.....	do.....	6.6	4.8	4.9	6.7	3.5	3.8	8.4	5.3	5.2	7.8	4.8	5.1	4.8	5.1	5.1
Cabbage.....	do.....	5.7	3.5	4.7	6.6	3.3	4.5	5.5	4.3	4.7	6.0	5.0	6.1	5.0	6.1	6.1
Pork and beans.....	No. 2 can.....	12.0	12.1	12.0	11.8	12.4	12.3	11.6	11.1	10.7	10.8	10.6	10.5	10.5	10.5	10.5
Corn, canned.....	do.....	16.7	16.5	16.5	17.5	17.4	17.2	14.9	15.0	14.6	15.3	15.2	15.2	15.2	15.2	15.2
Peas, canned.....	do.....	18.0	17.8	17.5	18.0	17.6	15.8	15.5	15.8	14.5	16.6	16.3	16.3	16.6	16.3	16.3
Tomatoes, canned.....	do.....	12.9	13.3	13.3	15.5	15.9	15.8	13.9	13.6	13.6	11.0	10.5	11.0	10.5	11.0	11.0
Sugar, granulated.....	pound.....	6.6	6.6	6.6	6.6	6.5	6.5	7.2	7.0	6.8	6.3	6.1	6.2	6.1	6.2	6.2
Tea.....	do.....	67.6	66.1	67.1	78.9	78.0	76.3	82.3	81.9	82.3	89.9	89.9	88.1	89.9	88.1	88.1
Coffee.....	do.....	50.6	47.9	45.1	51.8	49.1	46.7	51.7	49.6	47.2	47.0	42.1	39.6	42.1	39.6	39.6
Prunes.....	do.....	14.4	17.7	18.9	13.6	16.6	15.7	13.6	19.6	19.8	15.4	18.9	19.0	18.9	19.0	19.0
Raisins.....	do.....	12.3	12.4	12.3	11.1	11.7	11.4	11.6	12.6	12.4	12.9	13.3	13.0	13.3	13.0	13.0
Bananas.....	dozen.....	31.2	29.6	28.5	11.5	10.1	10.0	9.7	8.3	8.3	34.2	30.0	29.7	30.0	29.7	29.7
Oranges.....	do.....	60.9	47.3	47.6	43.0	36.0	45.6	48.9	43.5	48.2	43.9	44.2	42.9	44.2	42.9	42.9

<sup>a</sup> Per pound.<sup>b</sup> No. 2½ can.

## Comparison of Retail Food Costs in 51 Cities

TABLE 6 shows for 39 cities the percentage of increase or decrease in the retail cost of food<sup>3</sup> in January, 1930, compared with the average cost in the year 1913, in January, 1929, and December, 1929. For 12 other cities comparisons are given for the 1-year and the 1-month periods; these cities have been scheduled by the bureau at different dates since 1913. The percentage changes are based on actual retail prices secured each month from retail dealers and on the average family consumption of these articles in each city.<sup>4</sup>

Effort has been made by the bureau each month to have all schedules for each city included in the average prices. For the month of January, 99 per cent of all the firms supplying retail prices in the 51 cities sent in a report promptly. The following-named 36 cities had a perfect record; that is, every merchant who is cooperating with the bureau sent in his report in time for his prices to be included in the city averages: Atlanta, Boston, Bridgeport, Buffalo, Butte, Charleston, S. C., Chicago, Cincinnati, Cleveland, Columbus, Dallas, Fall River, Indianapolis, Jacksonville, Kansas City, Louisville, Manchester, Memphis, Minneapolis, Mobile, Newark, New Haven, New York, Omaha, Peoria, Portland, Me., Richmond, Rochester, St. Louis, St. Paul, San Francisco, Savannah, Scranton, Seattle, Springfield, Ill., and Washington.

TABLE 6.—PERCENTAGE CHANGE IN THE RETAIL COST OF FOOD IN JANUARY, 1930, COMPARED WITH THE COST IN DECEMBER, 1929, JANUARY, 1929, AND WITH THE AVERAGE COST IN THE YEAR 1913, BY CITIES

City	Percentage increase January, 1930, compared with—		Percent- age decrease 1930, compared with Decem- ber, 1929	City	Percentage increase January, 1930, compared with—		Percent- age decrease 1930, compared with Decem- ber, 1929
	1913	January, 1929			1913	January, 1929	
Atlanta.....	55.9	* 3.4	1.4	Minneapolis.....	56.8	1.9	1.5
Baltimore.....	60.1	1.5	1.3	Mobile.....	.....	* .8	1.4
Birmingham.....	58.5	* 1.6	1.1	Newark.....	49.6	.0	2.6
Boston.....	57.8	1.6	1.5	New Haven.....	57.4	.8	2.7
Bridgeport.....	* .6	4.0	.....	New Orleans.....	55.2	.2	1.8
Buffalo.....	59.1	* 1	2.5	New York.....	57.5	* .2	2.6
Butte.....	.....	1.3	2.0	Norfolk.....	.....	* .1	2.1
Charleston, S. C.....	57.9	.4	1.6	Omaha.....	50.7	1.3	.3
Chicago.....	68.3	2.1	1.9	Peoria.....	.....	2.1	.6
Cincinnati.....	61.8	2.1	2.0	Philadelphia.....	57.7	1.2	3.3
Cleveland.....	50.2	* .4	.2	Pittsburgh.....	57.1	* 1.0	1.6
Columbus.....	.....	.9	1.5	Portland, Me.....	.....	* .9	1.4
Dallas.....	55.3	* .4	2.3	Portland, Oreg.....	41.0	* .1	2.9
Denver.....	38.2	.0	2.6	Providence.....	57.6	1.0	1.5
Detroit.....	61.4	.2	.8	Richmond.....	60.6	.5	.8
Fall River.....	53.3	* .6	2.0	Rochester.....	.....	* .6	2.4
Houston.....	.....	1.0	1.8	St. Louis.....	60.1	1.3	.7
Indianapolis.....	53.5	.3	1.7	St. Paul.....	.....	1.4	1.2
Jacksonville.....	45.1	1.6	.8	Salt Lake City.....	31.4	* 1.4	3.1
Kansas City.....	55.2	1.6	.6	San Francisco.....	53.8	1.0	.9
Little Rock.....	51.9	.3	.9	Savannah.....	.....	.8	2.1
Los Angeles.....	42.6	* 1.3	.9	Scranton.....	63.0	.9	2.8
Louisville.....	50.6	* 2.3	2.6	Seattle.....	46.5	* .1	3.5
Manchester.....	51.3	* .8	1.2	Springfield, Ill.....	.....	1.2	.9
Memphis.....	50.4	.1	.6	Washington.....	61.9	* .1	.8
Milwaukee.....	58.3	1.5	1.0				

\* Decrease.

<sup>3</sup> For list of articles see note 1, p. 180.

<sup>4</sup> The consumption figures used from January, 1913, to December, 1920, for each article in each city are given in the Labor Review for November, 1918, pp. 94 and 95. The consumption figures which have been used for each month, beginning with January, 1921, are given in the Labor Review for March, 1921, p. 25.

### Retail Prices of Coal in the United States<sup>5</sup>

THE following table shows the average retail prices of coal on January 15 and December 15, 1929, and January 15, 1930, for the United States and for each of the cities from which retail food prices have been obtained. The prices quoted are for coal delivered to consumers, but do not include charges for storing the coal in cellar or coal bin where an extra handling is necessary.

In addition to the prices for Pennsylvania anthracite, prices are shown for Colorado, Arkansas, and New Mexico anthracite in those cities where these coals form any considerable portion of the sales for household use.

The prices shown for bituminous coal are averages of prices of the several kinds sold for household use.

TABLE 1.—AVERAGE RETAIL PRICES OF COAL PER TON OF 2,000 POUNDS, FOR HOUSEHOLD USE, ON JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930

City, and kind of coal	1929		1930	City, and kind of coal	1929		1930
	Jan. 15	Dec. 15	Jan. 15		Jan. 15	Dec. 15	Jan. 15
United States:				Cincinnati, Ohio:			
Pennsylvania anthracite—				Bituminous—			
Stove—				Prepared sizes—			
Average price.....	\$15.38	\$15.34	\$15.33	High volatile.....	\$5.54	\$6.30	\$6.30
Index (1913=100).....	199.1	198.5	198.4	Low volatile.....	7.79	8.78	8.78
Chestnut—				Cleveland, Ohio:			
Average price.....	\$15.06	\$15.00	\$15.00	Pennsylvania anthracite—			
Index (1913=100).....	190.3	189.6	189.5	Stove.....	15.38	15.24	15.29
Bituminous—				Chestnut.....	14.97	14.80	14.85
Average price.....	\$9.09	\$9.05	\$9.11	Bituminous—			
Index (1913=100).....	167.2	166.5	167.6	Prepared sizes—			
Atlanta, Ga.:				High volatile.....	7.43	7.10	7.15
Bituminous, prepared sizes.....	\$7.97	\$7.79	\$7.80	Low volatile.....	10.03	9.97	10.03
Baltimore, Md.:				Columbus, Ohio:			
Pennsylvania anthracite—				Bituminous—			
Stove.....	*16.00	14.25	14.25	Prepared sizes—			
Chestnut.....	*15.50	13.75	13.75	High volatile.....	6.09	5.95	6.07
Bituminous, run of mine—				Low volatile.....	8.06	8.31	8.38
High volatile.....	8.00	7.96	7.89	Dallas, Tex.:			
Birmingham, Ala.:				Arkansas anthracite—Egg.....	15.50	15.50	15.50
Bituminous, prepared sizes.....	7.66	7.64	7.65	Bituminous, prepared sizes.....	13.17	12.92	12.92
Boston, Mass.:				Denver, Colo.:			
Pennsylvania anthracite—				Colorado anthracite—			
Stove.....	16.25	16.00	16.00	Furnace, 1 and 2 mixed.....	16.00	14.75	14.75
Chestnut.....	16.00	15.50	15.50	Stove, 3 and 5 mixed.....	16.00	14.75	14.75
Bridgeport, Conn.:				Bituminous, prepared sizes.....	10.52	10.45	10.45
Pennsylvania anthracite—				Detroit, Mich.:			
Stove.....	15.00	15.50	15.50	Pennsylvania anthracite—			
Chestnut.....	15.00	15.50	15.50	Stove.....	16.00	16.00	16.00
Buffalo, N. Y.:				Chestnut.....	15.50	15.50	15.50
Pennsylvania anthracite—				Bituminous—			
Stove.....	14.02	13.77	13.77	Prepared sizes—			
Chestnut.....	13.53	13.32	13.32	High volatile.....	8.33	8.39	8.39
Butte, Mont.:				Low volatile.....	10.33	10.34	10.31
Bituminous, prepared sizes.....	10.93	11.17	11.15	Run of mine—			
Charleston, S. C.:				Low volatile.....	8.00	8.00	8.00
Bituminous, prepared sizes.....	9.67	9.67	9.67	Fall River, Mass.:			
Chicago, Ill.:				Pennsylvania anthracite—			
Pennsylvania anthracite—				Stove.....	16.50	16.50	16.50
Stove.....	16.80	16.85	16.85	Chestnut.....	16.25	16.25	16.25
Chestnut.....	16.45	16.40	16.40	Houston, Tex.:			
Bituminous—				Bituminous, prepared sizes.....	13.20	13.20	13.60
Prepared sizes—				Indianapolis, Ind.:			
High volatile.....	8.20	8.47	8.53	Bituminous—			
Low volatile.....	11.85	12.35	12.32	Prepared sizes—			
Run of mine—				High volatile.....	6.28	6.15	6.01
Low volatile.....	8.25	8.25	8.25	Low volatile.....	9.04	9.00	8.71
				Run of mine—			
				Low volatile.....	7.00	7.17	7.17

<sup>5</sup> Prices of coal were formerly secured semiannually and published in the March and September issues of the *Labor Review*. Since June, 1920, these prices have been secured and published monthly.

\* Per ton of 2,240 pounds.

TABLE 1.—AVERAGE RETAIL PRICES OF COAL PER TON OF 2,000 POUNDS, FOR HOUSE-HOLD USE, ON JANUARY 15 AND DECEMBER 15, 1929, AND JANUARY 15, 1930—Con.

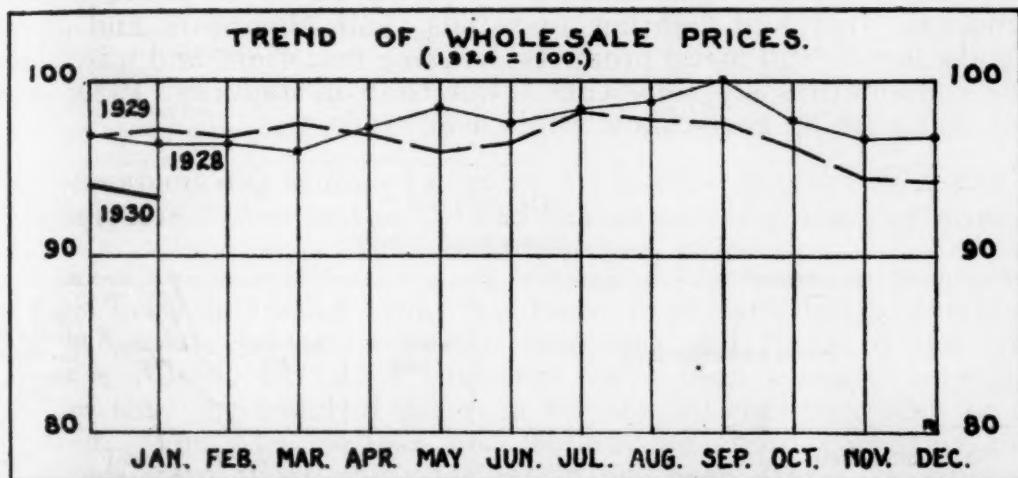
City, and kind of coal	1929		1930		City, and kind of coal	1929		1930	
	Jan. 15	Dec. 15	Jan. 15	Jan. 15		Jan. 15	Dec. 15	Jan. 15	Jan. 15
Jacksonville, Fla.: Bituminous, prepared sizes	\$12.00	\$14.00	\$14.00		Pittsburgh, Pa.: Pennsylvania anthracite— Chestnut	\$15.00	\$15.00	\$15.00	
Kansas City, Mo.: Arkansas anthracite— Furnace	12.60	12.55	12.55		Chestnut	5.25	5.29	5.29	
Stove No. 4	14.33	13.58	13.67		Bituminous, prepared sizes				
Little Rock, Ark.: Arkansas anthracite—Egg	13.50	13.50	13.50		Portland, Me.: Pennsylvania anthracite— Stove	16.80	16.80	16.80	
Bituminous, prepared sizes	10.25	10.10	9.95		Chestnut	16.80	16.80	16.80	
Los Angeles, Calif.: Bituminous, prepared sizes	16.25	16.50	16.50		Portland, Oreg.: Bituminous, prepared sizes	13.07	13.49	13.40	
Louisville, Ky.: Bituminous— Prepared sizes— High volatile	7.16	7.08	7.01		Providence, R. I.: Pennsylvania anthracite— Stove	2 16.00	2 16.00	2 16.00	
Low volatile	9.75	9.50	9.50		Chestnut	2 16.00	2 16.00	2 16.00	
Manchester, N. H.: Pennsylvania anthracite— Stove	17.25	17.00	17.00		Richmond, Va.: Pennsylvania anthracite— Stove	15.00	15.00	15.00	
Chestnut	17.00	17.00	17.00		Chestnut	15.00	15.00	15.00	
Memphis, Tenn.: Bituminous, prepared sizes	7.37	7.39	7.85		Bituminous— Prepared sizes— High volatile	8.38	8.38	8.38	
Milwaukee, Wis.: Pennsylvania anthracite— Stove	16.30	16.30	16.30		Low volatile	9.83	9.14	9.13	
Chestnut	15.90	15.85	15.85		Run of mine— Low volatile	7.50	7.25	7.25	
Minneapolis, Minn.: Pennsylvania anthracite— Stove	18.28	18.30	18.30		Rochester, N. Y.: Pennsylvania anthracite— Stove	14.75	14.75	14.75	
Chestnut	17.90	17.85	17.85		Chestnut	14.25	14.25	14.25	
Bituminous— Prepared sizes— High volatile	7.80	7.68	7.68		St. Louis, Mo.: Pennsylvania anthracite— Stove	16.75	16.65	16.65	
Low volatile	11.08	11.01	10.99		Chestnut	16.45	16.40	16.40	
Mobile, Ala.: Bituminous, prepared sizes	9.57	9.63	9.63		Bituminous, prepared sizes	6.40	6.69	6.69	
Newark, N. J.: Pennsylvania anthracite— Stove	14.00	13.96	13.96		St. Paul, Minn.: Pennsylvania anthracite— Stove	18.30	18.30	18.30	
Chestnut	13.50	13.46	13.46		Chestnut	17.90	17.85	17.85	
New Haven, Conn.: Pennsylvania anthracite— Stove	14.90	15.25	15.17		Bituminous— Prepared sizes— High volatile	10.68	10.27	10.27	
Chestnut	14.90	15.25	15.17		Low volatile	13.50	13.65	13.65	
New Orleans, La.: Bituminous, prepared sizes	11.29	10.96	10.96		Salt Lake City, Utah: Colorado anthracite— Furnace, 1 and 2 mixed	18.00	18.00	18.00	
New York, N. Y.: Pennsylvania anthracite— Stove	14.79	14.58	14.63		Furnace, 3 and 5 mixed	18.00	18.00	18.00	
Chestnut	14.33	14.08	14.13		Bituminous, prepared sizes	7.86	8.38	8.38	
Norfolk, Va.: Pennsylvania anthracite— Stove	15.00	14.00	14.00		San Francisco, Calif.: New Mexico anthracite— Cerillos egg	26.00	26.00	26.00	
Chestnut	15.00	14.00	14.00		Colorado anthracite— Egg	25.50	25.50	25.50	
Bituminous— Prepared sizes— High volatile	7.88	7.25	7.25		Bituminous, prepared sizes	16.75	17.13	16.98	
Low volatile	10.50	9.00	9.00		Savannah, Ga.: Bituminous, prepared sizes	3 10.53	3 10.24	3 10.24	
Run of mine— Low volatile	7.00	6.67	6.50		Scranton, Pa.: Pennsylvania anthracite— Stove	10.53	10.28	10.28	
Omaha, Nebr.: Bituminous, prepared sizes	9.50	9.69	9.69		Chestnut	10.33	9.92	9.92	
Peoria, Ill.: Bituminous, prepared sizes	6.90	6.75	6.75		Seattle, Wash.: Bituminous, prepared sizes	10.48	10.68	10.68	
Philadelphia, Pa.: Pennsylvania anthracite— Stove	14.67	15.00	15.00		Springfield, Ill.: Bituminous, prepared sizes	4.24	4.34	4.34	
Chestnut	14.11	14.50	14.50		Washington, D. C.: Pennsylvania anthracite— Stove	1 15.63	1 15.73	1 15.73	
					Chestnut	1 15.13	1 15.23	1 15.23	
					Bituminous— Prepared sizes— High volatile	1 8.75	1 8.63	1 8.63	
					Low volatile	1 11.42	1 11.42	1 11.43	
					Run of mine— Mixed	1 7.63	1 7.72	1 7.75	

<sup>1</sup> Per ton of 2,240 pounds.<sup>2</sup> The average price of coal delivered in bin is 50 cents higher than here shown. Practically all coal is delivered in bin.<sup>3</sup> All coal sold in Savannah is weighed by the city. A charge of 10 cents per ton or half ton is made. This additional charge has been included in the above price.

### Index Numbers of Wholesale Prices in January, 1930

THE recession of wholesale prices which began in August, 1929, continued into January of the present year, as shown by information collected in leading markets of the country by the Bureau of Labor Statistics of the United States Department of Labor. The bureau's weighted index number, with prices in 1926 as 100.0, stands at 93.4 for January compared with 94.2 for December, 1929, a decrease of slightly more than three-fourths of 1 per cent. This is the lowest level reached since April, 1922, when the index number was 93.2. Compared with January, 1929, with an index number of 97.2, a decrease of nearly 4 per cent is shown. Based on these figures, the purchasing power of the dollar in January, 1929, was 102.9, December, 1929, was 106.2, and January, 1930, was 107.1, compared with 100.0 for the year 1926.

Farm products as a whole showed a decrease of nearly 1 per cent. Pronounced increases in all livestock and poultry prices being more



than offset by the decided decreases in the prices of grains, cotton, eggs, lemons, oranges, and wool.

The decrease in foods was almost 1½ per cent. Butter, cheese, cured fish, rye flour, dried fruits, pepper, and most vegetable oils showed lower prices in January, while lamb, mutton, ham, fresh pork, and poultry showed increased prices.

The hides and leather products group recorded the greatest drop in prices, with a decrease of more than 2 per cent. All subgroups showed a falling off as compared with the preceding month.

Weakening markets for cotton goods, woolen and worsted goods, and other textile products caused a drop of over 1 per cent for textile products. Silk and rayon showed a slight increase.

Anthracite coal was stationary, while bituminous coal, coke, and petroleum products moved downward. The fuel and lighting group as a whole decreased 1¾ per cent.

Nails, steel bars, steel plates, tin plate, and wire fence declined slightly in price, as did also bar silver, slab zinc, and the general average for automobiles. Agricultural implements and sewing machines remained at the December level. The average for the group of metals and metal products declined slightly.

A slight advance in lumber and cement prices was offset by declines in paint materials, brick, and other building materials.

Chemicals and drugs as a whole, including fertilizer materials and prepared fertilizers, receded only slightly in price. No change was shown for house-furnishing goods.

In the group of miscellaneous commodities there were declines in cattle feed, crude rubber, and other miscellaneous, while paper and pulp and automobile tires did not change in average prices.

A decrease was shown for each of the groups classified as raw materials, semimanufactured articles, finished products, and nonagricultural commodities.

Of the 550 commodities or price series for which comparable information for December and January was collected, increases were shown in 90 instances and decreases in 203 instances. In 257 instances no change in price was reported.

Comparing prices in January with those of a year ago, as measured by changes in the index numbers, it is seen that considerable decreases have taken place in hides and leather products, textile products, farm products, fuel and lighting materials, and chemicals and drugs. Foods, metals and metal products, building materials, and miscellaneous commodities are somewhat lower than in January, 1929, while house-furnishing goods show a minor advance.

**INDEX NUMBERS OF WHOLESALE PRICES BY GROUPS AND SUBGROUPS OF COMMODITIES**

[1926=100.0]

Groups and subgroups	January, 1929	December, 1929	January, 1930	Purchasing power of the dollar January, 1930
All commodities.....	97.2	94.2	93.4	107.1
Farm products.....	105.9	101.9	101.0	99.0
Grains.....	98.3	97.5	93.8	106.6
Livestock and poultry.....	102.1	94.6	100.5	99.5
Other farm products.....	111.3	108.2	103.9	96.2
Foods.....	98.8	98.6	97.2	102.9
Butter, cheese, and milk.....	109.0	101.9	97.5	102.6
Meats.....	105.7	103.2	106.2	94.2
Other foods.....	90.7	94.4	91.7	109.1
Hides and leather products.....	113.6	107.4	105.1	95.1
Hides and skins.....	124.1	107.4	104.2	96.0
Leather.....	120.5	110.6	108.3	92.3
Boots and shoes.....	106.7	106.1	103.8	96.3
Other leather products.....	107.6	103.1	105.8	94.5
Textile products.....	96.4	90.4	89.4	111.9
Cotton goods.....	101.3	97.2	95.4	104.8
Silk and rayon.....	83.2	75.4	76.0	131.6
Woolen and worsted goods.....	101.1	94.6	94.0	106.4
Other textile products.....	85.3	75.1	72.3	138.3
Fuel and lighting materials.....	82.5	81.3	79.9	125.2
Anthracite coal.....	91.1	91.2	91.2	109.6
Bituminous coal.....	93.0	92.4	92.2	108.5
Coke.....	84.5	84.2	84.1	118.9
Manufactured gas.....	92.4	91.7	(1)	148.6
Petroleum products.....	71.9	69.9	67.3	98.8
Metals and metal products.....	108.6	102.1	101.2	104.5
Iron and steel.....	96.7	96.3	95.7	99.4
Nonferrous metals.....	100.7	101.5	100.6	104.1
Agricultural implements.....	98.8	96.1	96.1	93.6
Automobiles.....	111.6	108.0	106.8	101.6
Other metal products.....	98.4	98.6	98.4	101.6

<sup>1</sup> Data not yet available.

## INDEX NUMBER OF WHOLESALE PRICES BY GROUPS AND SUBGROUPS OF COMMODITIES—Continued

Groups and subgroups	January, 1929	December, 1929	January, 1930	Purchasing power of the dollar January, 1930
Building materials.....	96.6	96.2	96.2	104.0
Lumber.....	92.9	92.4	92.7	107.9
Brick.....	92.9	90.5	90.4	110.6
Cement.....	94.6	89.2	90.4	110.6
Structural steel.....	97.0	97.0	97.0	103.1
Paint materials.....	86.7	95.7	93.7	106.7
Other building materials.....	107.8	106.5	106.4	94.0
Chemicals and drugs.....	95.9	93.6	93.0	107.5
Chemicals.....	102.1	99.6	98.9	101.1
Drugs and pharmaceuticals.....	71.0	70.6	69.0	144.9
Fertilizer materials.....	94.6	89.5	89.8	111.4
Fertilizers.....	97.1	97.1	97.1	103.0
House-furnishings goods.....	96.6	97.3	97.3	102.8
Furniture.....	95.1	96.7	96.6	103.5
Furnishings.....	97.6	97.7	97.7	102.4
Miscellaneous.....	80.5	79.8	78.7	127.1
Cattle feed.....	134.8	122.4	113.5	88.1
Paper and pulp.....	87.8	87.3	87.3	114.5
Rubber.....	40.8	33.2	31.1	321.5
Automobile tires.....	58.1	55.2	55.2	181.2
Other miscellaneous.....	100.9	108.9	108.3	92.3
Raw materials.....	98.7	95.0	94.0	106.4
Semimanufactured articles.....	97.3	94.3	93.0	107.5
Furnished products.....	96.5	93.9	93.3	107.2
Nonagricultural commodities.....	94.9	92.1	91.4	109.4

Wholesale Prices in the United States and in Foreign Countries,  
1923 to December, 1929

IN THE following table the more important index numbers of wholesale prices in foreign countries and those of the United States Bureau of Labor Statistics have been brought together in order that the trend of prices in the several countries may be compared. The base periods here shown are those appearing in the sources from which the information has been drawn, in most cases being the year 1913. Only general comparisons can be made from these figures, since, in addition to differences in the base periods, there are important differences in the composition of the index numbers themselves.

## INDEX NUMBERS OF WHOLESALE PRICES IN THE UNITED STATES AND IN CERTAIN FOREIGN COUNTRIES

Country	United States	Canada	Austria	Belgium	Czechoslovakia	Denmark	Finland	France	Germany	Italy
Computing agency	Bureau of Labor Statistics	Dominion Bureau of Statistics (revised)	Federal Statistical Bureau	Ministry of Industry and Labor	Central Bureau of Statistics (revised index)	Statistical Department	Central Bureau of Statistics (revised)	General Statistical Bureau	Federal Statistical Bureau	Riccardo Bachì (revised)
Base period	1926	1926	January-June, 1914	April, 1914	July, 1914	1913	1926	1913	1913	1913
Commodities	550	502	47	128	69	118	139	45	400	100
Year and month										
1923	100.6	98.0	124	497	977	-	-	419	-	1 503.9
1924	98.1	99.4	136	573	997	-	-	488	137.3	1 497.4
1925	103.5	102.6	136	558	1008	210	-	550	141.8	1 612.0
1926	100.0	100.0	123	744	954	163	100	703	134.4	1 618.2
1927	95.4	97.7	133	847	979	153	101	617	137.6	1 466.7
1928	97.7	96.4	130	843	977	153	102	620	140.0	1 453.1
1923	-	-	-	-	-	-	-	-	-	-
January	102.0	-	-	434	991	-	-	387	-	516.1
April	103.9	-	-	480	1012	-	-	415	-	525.7
July	98.4	-	-	504	949	-	-	407	-	503.9
October	99.4	-	-	515	960	-	-	421	-	499.6
1924	-	-	-	-	-	-	-	-	-	-
January	99.6	-	-	580	974	-	-	494	-	504.4
April	97.3	-	-	555	1006	-	-	450	-	510.3
July	95.6	-	-	566	953	-	-	481	-	497.4
October	98.2	-	-	555	999	-	-	497	-	522.0
1925	-	-	-	-	-	-	-	-	-	-
January	102.9	-	-	559	1045	243	-	514	-	568.2
February	104.0	-	-	551	1048	240	-	515	-	571.1
March	104.2	-	-	546	1034	236	-	514	-	571.2
April	101.9	-	-	538	1020	230	-	513	-	570.1
May	101.6	-	-	537	1006	227	-	520	-	571.2
June	103.0	-	-	552	998	223	-	543	-	590.9
July	104.3	-	-	559	1009	212	-	557	-	612.0
August	103.9	-	-	567	993	197	-	557	-	630.6
September	103.4	-	-	577	996	186	-	556	-	621.5
October	103.6	-	-	575	989	179	-	572	-	617.1
November	104.5	-	-	569	977	176	-	605	-	612.3
December	103.4	-	-	565	977	176	-	633	-	613.8
1926	-	-	-	-	-	-	-	-	-	-
January	103.6	103.0	122	560	966	172	-	634	135.8	608.0
February	102.1	102.1	120	556	950	165	-	636	134.3	603.5
March	100.4	101.3	119	583	938	158	-	632	133.1	592.3
April	100.1	101.2	119	621	923	157	-	650	132.7	590.0
May	100.5	100.2	118	602	928	158	-	668	132.3	595.8
June	100.5	100.2	124	761	926	157	-	738	131.9	604.9
July	99.5	100.2	126	876	948	158	-	836	133.1	618.2
August	99.0	99.1	126	836	963	162	-	769	134.0	632.5
September	99.7	98.5	123	859	973	162	-	787	134.9	622.0
October	99.4	98.1	125	856	972	178	-	751	136.2	596.7
November	98.4	97.6	128	865	978	170	-	684	137.1	594.2
December	97.9	97.9	127	860	978	158	-	627	137.1	573.6
1927	-	-	-	-	-	-	-	-	-	-
January	96.6	97.8	130	856	979	157	100	622	135.9	558.2
February	95.9	97.6	130	854	975	156	101	632	135.6	555.8
March	94.5	97.3	133	858	976	153	101	641	135.0	544.7
April	93.7	97.5	135	846	979	152	100	636	134.8	521.3
May	93.7	98.5	137	848	988	152	100	628	137.1	496.2
June	93.8	98.9	142	851	900	152	101	622	137.0	473.4
July	94.1	98.6	140	845	992	152	101	621	137.6	466.7
August	95.2	98.3	133	850	983	153	102	618	137.9	465.4
September	96.5	97.1	130	837	975	153	101	600	139.7	465.4
October	97.0	97.2	129	839	966	154	101	587	139.8	467.5
November	96.7	96.9	127	838	967	154	103	594	140.1	466.0
December	96.8	97.3	127	841	975	154	103	604	139.6	462.9

<sup>1</sup> July.

## INDEX NUMBERS OF WHOLESALE PRICES IN THE UNITED STATES AND IN CERTAIN FOREIGN COUNTRIES—Continued

Country	United States	Canada	Austria	Belgium	Czechoslovakia	Denmark	Finland	France	Germany	Italy
Computing agency	Bureau of Labor Statistics	Dominion Bureau of Statistics (revised)	Federal Statistical Bureau	Ministry of Industry and Labor	Central Bureau of Statistics (revised index)	Statistical Department	Central Bureau of Statistics (revised)	General Statistical Bureau	Federal Statistical Bureau	Riccardo Bachini (revised)
Base period.	1926	1926	January-June, 1914	April, 1914	July, 1914	1913	1926	1913	1913	1913
Commodities	550	502	47	128	69	118	139	45	400	100
<i>Year and month</i>										
1928										
January	96.3	96.9	129	851	982	153	102	607	138.7	463.5
February	96.4	96.8	128	848	985	152	102	609	137.9	461.3
March	96.0	97.7	129	848	978	153	103	623	138.5	463.9
April	97.4	98.3	131	847	984	154	103	624	139.5	464.4
May	98.6	97.7	131	844	987	155	103	632	141.2	464.9
June	97.6	97.1	133	844	986	155	103	626	141.3	461.7
July	98.3	96.2	133	841	979	155	103	624	141.6	453.1
August	98.9	95.4	133	831	996	154	103	617	141.5	456.2
September	100.1	95.5	131	830	986	151	101	620	139.9	457.8
October	97.8	95.4	129	835	971	150	101	617	140.1	463.3
November	96.7	94.9	128	847	957	151	101	626	140.3	465.6
December	96.7	94.5	127	855	955	151	101	624	139.9	464.4
1929										
January	97.2	94.5	128	867	953	151	100	630	138.9	461.2
February	96.7	95.7	130	865	950	159	100	638	139.3	462.7
March	97.5	96.1	133	869	964	154	100	640	139.6	461.1
April	96.8	94.1	134	862	963	150	99	627	137.1	455.0
May	95.8	92.4	135	851	948	148	98	623	135.5	451.6
June	96.4	92.6	134	848	917	146	98	611	135.1	446.6
July	98.0	96.0	132	858	922	149	97	613	137.8	439.7
August	97.7	98.1	132	860	916	150	97	597	138.1	437.3
September	97.5	97.3	128	846	902	150	98	597	138.1	437.0
October	96.3	96.7	127	838	895	149	96	—	137.2	435.8
November	94.4	95.8	125	834	888	147	95	—	135.5	430.8
December	94.2	96.2	123	—	876	146	95	—	134.3	—

## INDEX NUMBERS OF WHOLESALE PRICES IN THE UNITED STATES AND IN CERTAIN FOREIGN COUNTRIES—Continued

Country	Neth- er- lands	Nor- way	Spain	Swe- den	Swit- zer- land	United King- dom	Aus- tralia	New Zeal- and	South Africa	Japan	China	India
Computing agency	Central Bureau of Statistics	Central Bureau of Statistics	Institute of Geography and Statistics	Chamber of Commerce	Federal Labor Department	Board of Trade	Bureau of Census and Statistics	Census and Statistics Office (revised)	Office of Census and Statistics	Bank of Japan, Tokyo	Bureau of Markets, Treasury Department, Shanghai	Labor Office, Bombay
Base period	1913	1913	1923	1913	July, 1914	1913	July, 1914	1913	1913	1913	1913	July, 1914
Commodities	348	95	74	160	120	150	92	180	187	56	3117	42
<i>Year and month</i>												
1923	151	232	172	163	181	158.9	170	158	127	199	156.4	181
1924	156	268	183	162	175	166.2	165	165	129	206	153.9	182
1925	155	253	188	161	162	159.1	162	161	128	202	159.4	163
1926	145	198	181	149	145	148.1	161	154	123	179	164.1	149
1927	148	167	172	146	142	141.4	159	146	124	170	170.4	147
1928	149	161	168	148	145	140.3	157	147	121	171	160.7	146
1923												
January	157	223	170	163		157.0	163		131	184	152.7	181
April	156	229	174	168		162.0	167		126	196	157.7	180
July	145	231	170	162		156.5	180		124	192	155.4	178
October	148	235	171	161		158.1	171		125	212	156.1	181
1924												
January	156	251	178	161		165.4	174		131	211	155.8	188
April	154	263	184	161		164.7	166		126	207	153.7	184
July	151	265	182	157		162.6	163		125	195	151.5	184
October	161	273	186	167		170.0	163		133	213	152.8	181
1925												
January	160	279	191	169		171.1	163	166	130	214	159.9	173
February	158	281	192	169		168.9	162	162		210	159.2	173
March	155	279	193	168		166.3	160	162		204	160.3	171
April	151	273	190	163		161.9	158	162	130	202	159.3	165
May	151	262	191	162		158.6	159	162		199	157.8	164
June	153	260	187	161		157.2	162	162		200	157.3	160
July	155	254	188	161		156.9	162	161	127	198	162.8	158
August	155	249	184	159		156.2	162	161		200	160.3	160
September	155	237	185	157		155.1	162	160		201	160.2	157
October	154	223	187	154		153.9	163	162	124	200	159.0	158
November	154	220	186	155		152.7	165	161		198	158.4	160
December	155	220	187	156		152.1	160	160		194	158.1	154
1926												
January	153	214	186	153	153	151.3	161	159	124	192	164.0	154
February	149	211	186	152	147	148.8	160	159		188	163.0	151
March	145	205	183	149	146	144.4	163	157		184	164.4	150
April	143	199	179	150	145	143.6	168	156	120	181	162.8	151
May	143	197	179	151	143	144.9	167	156		177	159.7	151
June	144	194	177	150	143	146.4	163	155		177	155.8	150
July	141	192	178	148	145	148.7	162	156	122	179	156.9	149
August	139	193	180	147	142	149.1	162	154		177	160.5	148
September	140	193	178	146	142	150.9	158	163		176	164.2	149
October	143	198	179	148	144	152.1	154	153	127	174	171.1	147
November	147	199	185	148	142	152.4	155	151		171	174.4	146
December	147	184	186	150	142	146.1	155	153		170	172.0	146

<sup>1</sup> 52 commodities in 1920; 53 commodities from August, 1920, to December, 1921.<sup>2</sup> 147 items.

## INDEX NUMBERS OF WHOLESALE PRICES IN THE UNITED STATES AND IN CERTAIN FOREIGN COUNTRIES—Continued

Country	Neth- er- lands	Nor- way	Spain	Swe- den	Swit- zer- land	United King- dom	Aus- tralia	New Zeal- and	South Africa	Japan	China	India
Computing agency	Central Bureau of Statistics	Central Bureau of Statistics	Institute of Geography and Statistics	Chamber of Commerce	Federal Labor Department	Board of Trade	Bureau of Census and Statistics	Cen- sus and Statistics Office (revised)	Office of Census and Statistics	Bank of Japan, Tokyo	Bureau of Markets, Treasury Department, Shanghai	Labor Office, Bom- bay
Base period.	1913	1913	1913	1913	July, 1914	1913	July, 1914	1913	1913	1913	1913	July, 1914
Commodities	48	95	74	160	120	150	92	180	187	56	117	42
Year and month												
1927												
January	145	174	184	146	141	143.6	154	151	128	170	172.8	146
February	146	172	180	146	141	142.6	153	147	—	171	172.0	148
March	144	167	179	145	141	140.6	150	147	—	171	174.7	146
April	143	164	177	143	140	139.8	151	147	126	170	173.1	145
May	145	162	172	145	141	141.1	152	145	—	171	171.3	146
June	149	166	171	146	140	141.8	155	146	—	172	169.3	147
July	151	165	168	146	140	141.1	161	146	120	170	171.0	147
August	149	167	168	146	142	140.9	165	146	—	167	170.8	148
September	150	167	169	148	144	142.1	170	146	—	169	171.8	148
October	150	165	169	147	145	141.4	173	146	122	170	168.7	146
November	151	166	168	148	147	141.1	166	147	—	168	165.7	144
December	151	166	169	148	146	140.4	162	148	—	168	163.5	143
1928												
January	153	184	166	148	145	141.1	163	150	123	169	163.1	141
February	150	163	166	147	144	140.3	160	147	—	169	164.3	142
March	152	164	165	149	145	140.8	160	147	—	169	163.4	140
April	153	162	166	151	146	142.9	162	147	121	170	163.1	142
May	152	162	164	152	145	143.6	159	148	—	171	164.5	145
June	153	161	164	151	145	142.6	158	148	—	169	160.0	149
July	148	162	164	150	144	141.1	157	148	119	169	159.2	147
August	144	162	166	149	144	139.3	154	147	—	170	157.2	146
September	145	158	168	146	144	137.6	153	148	—	174	156.2	148
October	146	157	174	145	145	137.9	152	149	120	174	158.8	150
November	148	157	176	145	145	137.9	152	150	—	173	159.2	149
December	148	157	175	145	144	138.3	154	149	—	174	159.9	145
1929												
January	146	154	171	144	143	138.3	157	147	120	172	160.1	148
February	146	155	173	145	143	138.4	156	146	—	171	162.4	150
March	147	155	174	144	142	140.1	157	146	—	171	164.2	147
April	144	154	174	141	140	138.8	158	146	117	170	161.2	144
May	142	152	171	140	139	135.8	156	147	—	169	161.7	141
June	141	151	170	139	139	135.6	158	147	—	168	162.6	143
July	141	152	169	140	143	137.4	159	147	115	166	162.7	145
August	142	154	170	141	143	135.8	160	148	—	165	164.7	146
September	141	154	171	140	142	135.8	162	148	—	164	167.1	147
October	140	154	172	138	142	136.1	161	148	113	163	168.0	146
November	137	152	—	135	140	134.0	158	—	—	160	164.7	—
December	135	—	—	—	139	132.5	—	—	—	155	164.7	—

## COST OF LIVING

### How 82 Skilled Workers' Families Spent Their Income

A STUDY of the incomes and expenditures of the families of 82 members of the San Francisco Typographical Union has been made by Prof. Jessica B. Peixotto, of the University of California,<sup>1</sup> who points out that the budgets of this particular group have a special value, inasmuch as detailed surveys of the expenditures of families who have what she considers may be fairly called a living wage are comparatively few. In the judgment of the author the actual budgets of these 82 families constitute a fair index of the spending tendencies of educated wage earners. The investigation was made between September 15 and November 15, 1921, and the earnings and expenditures reported were for the preceding 12 months. The contention of some humorists and moralists that the result of a higher wage is indulgence in the least useful luxury goods is, the author thinks, not upheld by this study. She maintains that, broadly speaking, this largely homogeneous group of settled American middle-aged families with an average of 2 children (exclusive of families with no children living at home) express, in their spending scheme, the usual so-called minimum of health and comfort standard of living.

The average amount of the 82 men's earnings from regular typographical work was \$2,486.90, mean, and \$2,507.50, median.

The average total income was \$2,818.59, mean; the median, \$2,600. The average total expenditure was \$2,761.42, mean; the median, \$2,656.71. The average discrepancy was thus a surplus of \$57.17, mean; or a deficit of \$56.71, median.<sup>2</sup> The mean amount spent for food, \$893.30, proves to be almost identical with the mean amount spent by a group of 96 families from the University of California faculty, commanding an average income twice as large.<sup>3</sup> The proportional expenditure was 32 per cent as compared with 17 per cent for the larger income group.

The families had invested in comfortable houses; two-thirds of them were living in separate dwellings; one-third owned their homes. Overcrowding was infrequent. The households of all but 18 families were run without service and only 3 of these 18 families spent over \$100 for such purpose. The houses were ordinarily small and the children few. In only a few families did the amounts expended on clothing allow attention to changes in style. Approximately one-third of the family income was absorbed by so-called "miscellaneous" items, which are commonly regarded as a real index of living levels. Only 1 of every 5 of these families had an automobile. Approximately

<sup>1</sup> Peixotto, Jessica B. Cost of Living Studies II: How workers spend a living wage. (Berkeley, University of California Press, 1929. (University of California Publication in Economics, vol. 5, No. 3, pp. 161-245.)

<sup>2</sup> In 38 schedules the income exceeded the expenditures, leaving a surplus; in 44 schedules the expenditures exceeded the income, leaving a deficit. The average discrepancy for the whole group was less than \$100. In the majority of cases the discrepancy was due to an error in estimating expenditures or income, or to incomplete reports. Of the 63 families who answered the questions as to whether the close of the year had seen them with a surplus or a deficit, 63.5 per cent reported that they "broke even," 19 per cent reported a surplus, and 17.5 per cent a deficit.

<sup>3</sup> The mean annual amount spent by the professional group was \$893.73.—Jessica B. Peixotto, Getting and Spending at the Professional Standard of Living (1927), p. 122.

all of them, however, found money for newspapers and magazines. Three out of four were purchasing life insurance or were saving money. Each of the union members was, under his trade agreement, entitled to a two weeks' vacation with pay, and half of the families had availed themselves of this privilege. The costs of the vacation, together with high union dues resulting from additional assessments for strike benefits, are cited as items of expenditure peculiar to this particular union.

The following table gives the average amounts allocated for each item of expenditure in the year covered and the average per cent of the total budget spent for each item:

AVERAGE AMOUNT AND PER CENT ALLOCATED TO EACH ITEM OF EXPENDITURE BY FAMILIES OF TYPOGRAPHICAL WORKERS IN SAN FRANCISCO IN ONE YEAR

Items of expenditure	Amount of expenditure			Per cent of expenditure		
	Number of families reporting <sup>1</sup>	Average spent for each item		Number of families reporting <sup>2</sup>	Per cent of total budget spent for each item	
		Mean	Median		Mean	Median
Food	77	\$893.30	\$880.00	73	32.5	32.4
Clothing	69	350.97	305.00	73	11.6	11.4
Shelter	80	426.92	428.00	73	15.3	14.7
House operation	81	263.92	206.00	73	9.0	7.3
Miscellaneous:						
Recreation	77	178.30	140.00	68	6.2	4.8
Automobiles	12	401.54	240.00	11	12.2	7.1
Education	73	65.11	29.40	66	2.2	1.0
Tobacco	57	59.43	52.00	52	2.3	1.8
Church	42	22.83	15.00	40	.9	.6
Charity	36	21.90	10.00	35	.8	.4
Medical care	74	143.22	97.00	68	5.1	3.3
Union dues	81	148.42	149.20	72	5.6	5.7
Investment	58	232.38	94.30	53	8.0	3.0
Incidentals	73	102.73	72.00	65	3.5	2.5
Total	82	886.87	791.04	73	31.6	30.9
All items <sup>4</sup>	82	2,761.42	2,656.71	73	100.0	100.0

<sup>1</sup> These are not the actual number of families who reported expenditures for any given item, but the number whose estimates were sufficiently complete to be used in computing the average.

<sup>2</sup> These are not the actual number of families who reported expenditures for any given item, but the number whose estimates both for the miscellaneous item in question and for the major items of the budget were sufficiently complete to warrant a per cent distribution.

<sup>3</sup> Several families with partly incomplete clothing reports have been included in this group, because the reports for other items were complete enough to warrant their use.

<sup>4</sup> The average total expenditures for the 73 families with the most complete reports are \$2,798.19 (mean) and \$2,661.72 (median).

# IMMIGRATION AND EMIGRATION

## Statistics of Immigration for December, 1929

By J. J. KUNNA, CHIEF STATISTICIAN UNITED STATES BUREAU OF IMMIGRATION

THE statistical review for December, 1929, shows that 29,319 aliens were admitted to the United States, 17,842 being classed as immigrants and 11,477 as nonimmigrants. The outward movement of aliens totaled 23,626, of whom 4,880 were emigrants and 18,746 were nonemigrants, the latter either leaving after a short stay in this country or going abroad for a temporary visit.

The six months ended December 31, 1929, witnessed the entry of 252,590 aliens (comprising 136,970 immigrants and 115,620 nonimmigrants) and the departure of 148,540 (28,647 emigrant and 119,893 nonemigrant aliens), resulting in a net increase in the alien population during the half year of 104,050. This is against a net increase of 108,767 for the corresponding period of 1928, 119,468 for 1927, and 151,938 for 1926.

Less than one-third of the aliens admitted during the six months from July to December last were of the class charged to the quota under the immigration act of 1924, 71,096 being recorded as quota immigrants; Great Britain, Germany, the Scandinavian countries, Poland, and Italy, in the order given, furnished the largest numbers. The returning residents, numbering 62,593 for the six months, comprised the second largest group, while the natives of nonquota countries, principally Canada and Mexico, were third in the list with 42,881. Other principal classes included 35,814 visitors for business or pleasure, 19,813 husbands, wives, and unmarried children of American citizens, and 13,510 aliens passing through the country on their way elsewhere.

Compared with the same period a year ago, the above-mentioned classes show an increase, with the exception of the quota immigrants and the natives of nonquota countries, whose number dropped from 71,569 and 56,448 to 71,096 and 42,881, respectively. The decline in quota immigrants was due mainly to the decreased allotments, under the present "national origin" plan, in the annual quotas for Germany, Irish Free State, and the Scandinavian countries, while the drop in the number of arrivals of natives of nonquota countries was almost entirely due to the large decrease in immigration from Mexico.

The number of persons debarred from entering the United States during the six months from July to December, 1929, was 4,189, of whom 3,105 were males and 1,084 were females. At New York, the port of entry for over four-fifths of the aliens arriving by water, 163,963 aliens sought admission in the said period; of these 600 were denied admission, or less than 4 per 1,000, and about 9 of every 10 rejected were males. During the same six months 432 aliens were debarred at the other seaports and 3,157 at points along the inter-

national land borders. The principal cause for debarment at both the seaports and land-border ports was entrance without proper visa under the immigration act of 1924.

During the six months ending December 31, 1929, 8,309 aliens were deported from the United States under warrant proceedings. This is an average of 1,385 a month, the peak period being in October, when 1,600 aliens were returned to the countries whence they came. Deportations in these six months show an increase of 2,652, or 47 per cent, over the 5,657 for the corresponding period a year ago. The vast majority of these deportees entered the country without inspection under the immigration laws.

INWARD AND OUTWARD PASSENGER MOVEMENT FROM JULY 1 TO DECEMBER 31, 1929

Period	Inward					Aliens debarred from entering <sup>1</sup>	Outward					Aliens deported after landing <sup>2</sup>		
	Aliens admitted			United States citizens arrived	Total		Aliens departed			United States citizens departed	Total			
	Immigrant	Non-immigrant	Total				Emigrant	Non-emigrant	Total					
1929														
July	20,068	15,749	35,817	37,636	73,453	847	5,086	23,084	28,170	56,339	84,509	1,261		
August	22,778	19,007	41,785	70,783	112,568	802	5,571	23,723	29,294	70,551	99,845	1,411		
September	28,020	28,517	56,537	85,946	142,483	719	5,150	21,398	26,548	40,429	75,977	1,205		
October	26,740	26,072	52,812	47,757	100,569	659	4,907	19,597	24,504	39,767	64,271	1,600		
November	21,522	14,798	36,320	25,129	61,449	591	3,053	13,345	16,396	20,413	36,811	1,286		
December	17,842	11,477	29,319	21,177	50,496	571	4,880	18,746	23,626	27,404	51,030	1,546		
Total	136,970	115,620	252,590	288,428	541,018	4,189	28,647	119,893	148,540	263,903	412,443	8,309		

<sup>1</sup> These aliens are not included among arrivals, as they were not permitted to enter the United States.

<sup>2</sup> These aliens are included among aliens departed, they having entered the United States, legally or illegally, and later being deported.

# PUBLICATIONS RELATING TO LABOR

## Official—United States

**CALIFORNIA.**—Department of Industrial Relations. *Special bulletin No. 1: Middle-aged and older workers. San Francisco, 1930.* 35 pp.; charts.

Reviewed in this issue.

**DETROIT (MICH.).**—Mayor's Labor Committee. *Report. Detroit, 1930.* 5 pp. Reviewed in this issue.

**GEORGIA.**—Department of Commerce and Labor. *Fifteenth and sixteenth reports, for the fiscal years 1927 and 1928. Atlanta, 1929.* 68 pp.

Includes wage statistics of the textile industry.

**HAWAII.**—Governor. *Annual report for fiscal year ended June 30, 1929. Washington, D. C., Department of the Interior, 1929.* 132 pp.; map.

Certain parts of this publication that deal with labor and immigration are reviewed in this issue.

**ILLINOIS.**—Board for Vocational Education. *Bulletin No. 47: Annual directory and program of agricultural education, 1929-1930. Springfield, September, 1929.* 32 pp.; map, illus.

In the year closing with June, 1930, there were 205 vocational agricultural schools reported for Illinois—an increase of 126 as compared with the number in 1920. For the same decade the enrollment rose from 1,940 to 5,632—an increase of 190.3 per cent.

— — — *Bulletin No. 48: Annual report, July 1, 1928, to June 30, 1929. Springfield, 1929.* 46 pp.

Gives detailed data concerning classes and schools established in agriculture, household economics, trades, and industries, and the amount of State and of Federal aid given such schools for the year under review.

**KENTUCKY.**—Bureau of Agriculture, Labor and Statistics. Department of Labor. *Bulletin 36: Why Kentucky needs a safety service. [Frankfort, 1930?]* 44 pp.; charts, illus.

An argument for the creation of a State safety commission. Contains tabular matter showing the number of accidents by causes, by age of workers, by nature and extent of injury, and by industry, for each year 1920 to 1929. Shows a total of 23,395 accidents in 1928, 173 being fatal; and a total of 19,365 in 1929 of which 144 were fatal. Seventeen thousand employers had accepted the terms of the compensation act in 1929, an increase of 728 over 1928.

**PORTO RICO.**—Industrial Commission. *Annual report, August 13, 1928, to June 30, 1929. San Juan, 1929.* 27 pp.

Reviewed in this issue.

**RHODE ISLAND.**—Department of Labor. *Report for the year 1928. Providence, 1929.* 40 pp.

Data on the experience under the workmen's compensation law of this State, shown in this report, are given in this issue.

**SEATTLE (WASH.).**—Civil Service Commission. *Salary survey, principal cities of the United States under civil service. Seattle, 1929.* 2 pp. and folded table.

Gives the minimum and maximum salaries in various public services in 16 cities and a few counties and States.

**VIRGINIA.**—Commission to Study the Condition of the Farmers of Virginia. *Report. Richmond, 1930.* 133 pp.

The subjects covered in this report include standards of living, living costs, and cooperative marketing.

WISCONSIN.—Industrial Commission. *Biennial report, 1926-1928.* Madison, 1928. 62 pp.

A review of the activities of the various departments and agencies of the commission, among which are a safety and sanitation department, a woman and child labor department, and an apprenticeship department.

UNITED STATES.—Civil Service Commission. *Forty-sixth annual report, for the fiscal year ended June 30, 1929.* Washington, 1929. 140 pp.

There were 587,665 employees in the entire executive civil service on June 30, 1929, an increase of 18,950 over the previous year. Of the total number, 63,904 were employed in the District of Columbia. The Postal Service had 314,795 employees, or 53.6 per cent of the total, a gain of 3,860 over the previous year.

— Department of Agriculture. *Circular No. 86: A business analysis of the Producers' Live Stock Commission Association of National Stock Yards, Ill., by Kelsey B. Gardner.* Washington, 1929. 44 pp.; charts, maps.

— — — *Circular No. 100: Business analysis of the Tobacco Growers' Cooperative Association, by John J. Scanlan and J. M. Tinley.* Washington, 1929. 151 pp.; charts, illus.

— — — *Miscellaneous publication No. 62: Bibliography on the relation of clothing to health, by Ruth O'Brien and others.* Washington, 1929. 146 pp.

The bibliography covers in the main the years 1875 to 1927 and includes references to English, French, and German books and articles relating to the hygienic aspects of clothing. The references are arranged by subjects, which are in turn classified chronologically according to authors.

— Department of Commerce. Bureau of Navigation. *Merchant marine statistics, 1929.* Washington, 1929. 96 pp.

Data on wages of American and foreign seamen, taken from this report, are given in this issue.

— — — Bureau of the Census. *Annual report for the fiscal year ended June 30, 1929.* Washington, 1929. 21 pp.

— — — *Census monographs, IX: Women in gainful occupations, 1870 to 1920, by Joseph A. Hill.* Washington, 1929. 418 pp.; charts.

The second special study of gainfully employed women which has been issued by the Bureau of the Census, the first having appeared shortly after the Census of 1900. Gives detailed information concerning occupation, race, age, marital condition, and similar facts concerning gainfully employed women, with comparative data showing the changes taking place in their occupational distribution.

— Department of Labor. Bureau of Immigration. *Immigration laws and rules of January 1, 1930.* Washington, 1929. 214 pp.

— — — Bureau of Labor Statistics. *Bulletin No. 496: Workmen's compensation legislation of the United States and Canada as of January 1, 1929, with text of legislation enacted in 1927 and 1928.* Washington, 1929. 260 pp.

— — — *Bulletin No. 502: Wages and hours of labor in the motor-vehicle industry, 1928.* Washington, 1929. 73 pp.

The data obtained in this study were summarized in the Labor Review for May, 1929 (pp. 179-187).

— — — *Bulletin No. 506: Handbook of American trade-unions, 1929 edition.* Washington, 1929. 218 pp.

Summarized in the Labor Review for February, 1930 (pp. 1-10).

— — — Women's Bureau. *Bulletin No. 72: Conditions of work in spin rooms, by Ethel L. Best.* Washington, 1929. 39 pp.

Reviewed in this issue.

— — — *Bulletin No. 76: Women in 5-and-10-cent stores and limited-price chain department stores, by Mary Elizabeth Pidgeon.* Washington, 1930. 58 pp.

Some of the findings of this study are discussed in this issue.

UNITED STATES.—Department of the Interior. *Education bulletin, 1929, No. 30: The general shop, by Maris M. Proffitt.* Washington, 1929. 27 pp.; plans.

Prepared by an expert in industrial education to meet the increasing number of demands from schools for information regarding the organization and conducting of a general shop for instructing children of approximately the junior high school age.

— Employees' Compensation Commission. *Thirteenth annual report, July 1, 1928, to June 30, 1929.* Washington, 1929. 96 pp.

Reviewed in this issue.

— Government Printing Office. *Children's Bureau and other publications relating to children. List of publications relating to above subject for sale by Superintendent of Documents, Washington, D. C.* Washington, October, 1929. 17 pp. Price list 71—11th ed.

— *Immigration, naturalization, citizenship, Chinese, Japanese, negroes, and aliens. List of publications relating to above subjects for sale by Superintendent of Documents, Washington, D. C.* Washington, December, 1929. 11 pp. Price list 67—15th ed.

### Official—Foreign Countries

AUSTRALIA.—Bureau of Census and Statistics. *Labor report, 1928.* Melbourne, 1929. 201 pp.; charts.

The subjects treated in the report include prices, wages, employment, and organizations of workers and employers.

FINLAND.—Sosialiministeriö. *Julkaisemia, sarja B, XII: Ammattientarkastus, 1928.* Helsingfors, 1929. 95 pp.

Gives detailed data, for the year 1928, regarding the activities of the national and local labor inspectors, together with a review of the changes in hours of labor and other labor conditions during the year. Contains a resumé and tables in French.

GREAT BRITAIN.—Home Office. *Silicosis (Medical Arrangements) Committee. Report, London, 1929.* 19 pp.

The committee, which was appointed to advise as to the arrangements which could be made for the diagnosis of silicosis in cases of claims arising under the workmen's compensation act, recommended that medical boards consisting of officers who devote their whole time to the work should be appointed and that these boards should be administered by a central bureau for the training of new members, for the keeping of records, and for research.

— Registry of Friendly Societies. *Report for the year 1928. Part 2: Friendly societies.* London, 1929. 40 pp.

INTERNATIONAL LABOR OFFICE.—*Legislación social de América Latina.* Vol. I. Geneva, 1928. xlivi, 368 pp. Vol. II. Geneva, 1929. xxvii, 645 pp.

— *The protection of women in industry and commerce before and after childbirth. A comparative study of legislation.* Geneva, January, 1929. 75 pp. Third edition. (Mimeographed.)

Reviewed in this issue.

— *Studies and reports, series O (migration), No. 4: Migration movements, 1925-1927.* Geneva, 1929. 129 pp.; charts.

The number of countries and territories for which statistics are given in this publication is 95 as compared with 74 shown in the report for 1920 to 1924, issued by the same office.

LEAGUE OF NATIONS.—*International health yearbook, 1928. Reports on the public health progress of twenty-nine countries (thirty-five public health administrations) in 1927.* Geneva, 1929. 1173 pp.

The report covers, in addition to questions relating to public health, data relative to hours of work, housing, industrial health and occupational diseases, employment of women, and workmen's compensation in the different countries.

LEIPZIG (GERMANY).—Statistisches Amt. *Statistisches Taschenbuch der Stadt Leipzig, 1929.* Leipzig, 1929. 84 pp.

Contains statistical information in regard to the city of Leipzig for 1929, including housing and unemployment.

NETHERLANDS.—Departement van Arbeid, Handel en Nijverheid. *Centraal Verslag der Arbeidsinspectie in het Koninkrijk der Nederlanden over 1928.* The Hague, 1929. [Various paging.] Diagrams, illus.

Reports on labor inspection in the Netherlands during 1928.

NETHERLANDS EAST INDIES.—Departement van Landbouw, Nijverheid en Handel. Centraal Kantoor voor de Statistiek. *Statistical abstract for the Netherlands East Indies, 1928.* Weltevreden, 1929. 498 pp. (In Dutch and English.)

Includes data on labor, production, prices, and cost of living. Figures showing wages of workers in the sugar industry of Java, taken from the volume, are published in this issue.

OSLO (NORWAY).—Statistiske Kontor. *Statistisk årbok for Oslo by, 1929.* Oslo, 1929. 107 pp. (In Norwegian and French.)

Contains information in regard to the city of Oslo for 1929, including wages and labor conditions.

RUSSIA (U. S. S. R.).—Mezhdunarodnyi agrarnyi institut. *Agrarnyi vopros v Rumynii.* Moscow, 1928. 284 pp.

Deals with the problem of agriculture in Rumania, including labor conditions.

— *Krestianskoe dvizhenie i natsional'nyi vopros v Jugoslavii.* Moscow, 1929. 107 pp.

Deals with the peasant movement and the problem of nationality in Yugoslavia.

— *Statisticheskii ezhegodnik po mirovomu sel'skomu khoziaistvu.* Moscow, 1928. 472 pp.

Contains statistical information in regard to the world's agriculture in 1928, including prices and wages.

— Zentralamt für Sozialversicherung. *Statistik der Sozialversicherung.* Moscow, 1929. xxii, 512 pp.

SOUTH AUSTRALIA. Factories and Steam Boilers Department. *Annual report for the year ending December 31, 1928.* Adelaide, 1929. 26 pp.

The number of factories registered showed a slight increase during the year, rising from 2,208 to 2,230; this was accompanied by a decrease in the number of workers from 28,798 in 1927 to 27,423 in 1928. This decrease appeared in all age and sex groups, except that of the adult female workers, whose number increased from 2,936 to 2,988.

— Statistical Department. *Statistical register, 1927-28.* Adelaide, 1929. [Various paging.]

Includes statistics on number of employees and wages paid in industrial establishments, migration, production, and prices.

SPAIN.—Ministerio de Trabajo y Previsión. Dirección General de Trabajo. *Estadística de las huelgas, 1927 y 1928.* Madrid, 1929. lxix, 96 pp.

Statistics of strikes in Spain in 1927 and 1928. Some of the figures are given in this issue of the Review.

TANGANYIKA TERRITORY.—Labor Department. *Annual report, 1927.* London, 1928. 63 pp.

— *Annual report, 1928.* Dar Es Salaam, 1929. 69 pp.

These two reports, covering the whole period of the department's activities (it was organized in 1926, but did little in that year beyond the work of organization), contain a description of the functions of the labor department, the characteristics of the African workers, the peculiar problems arising from the combination of white plantation owners and colored contract laborers, the kind of protection the natives need, and similar questions.

**UNION OF SOUTH AFRICA.**—Department of Labor. *Annual report of chief inspector of factories for the year 1928.* Pretoria, 1929. 26 pp.

Reports a steady expansion of industries throughout the country, with conditions of employment maintaining a steady level except for the ordinary fluctuations occurring in seasonal industries.

**VICTORIA (AUSTRALIA).**—Registrar of Friendly Societies. *Report for the year 1928.* Melbourne, 1929. 4 pp.

**ZURICH (SWITZERLAND).**—Statistisches Amt. *Statistisches Jahrbuch der Stadt Zurich, 1926/1927.* Zurich, 1929. 188 pp.

Contains statistical information regarding housing, prices, employment offices, etc., for the city of Zurich, Switzerland, during 1926 and 1927.

### Unofficial

**ALLEN, G. C.** *The industrial development of Birmingham and the Black Country, 1860-1927.* London, Geo. Allen & Unwin (Ltd.), 1929. 479 pp.; maps, illus.

A careful and detailed study of the economic and industrial development of the region, with special attention to the changes which, already in progress, were immensely accelerated by the World War and the depression which followed it. The suggestion is made that Birmingham and the Black Country generally are indicative of what is going on in Great Britain as a whole. "In broad terms, adaptation has involved increasing concentration on the production of finished goods of high quality. The West Midlands may be said to have anticipated the course which British manufactures as a whole seem now to be taking. It has maintained its supremacy in spite of the loss of cruder and heavier types of industry."

**AMERICAN FEDERATION OF LABOR.** *The story of progress among the women's garment makers.* Washington, 1929. 63 pp.; chart, illus.

A reprint of articles, by different writers, from the American Federationist for December, 1929.

**ARMAND-DELILLE, P.-F.** *Le service social dans les collectivités contemporaines.* Paris, Librairie Delagrave, 1929. 236 pp.

This volume deals with the development of social service in France and with the problems in connection with such work which have not yet been solved. Special emphasis is laid on the benefits which the great industrial enterprises may secure for their employees through this work, as well as its effect upon their general prosperity.

**BORSODI, RALPH.** *This ugly civilization.* New York, Simon & Schuster, 1929. 468 pp.; diagrams.

**CHASE, STUART.** *Prosperity—fact or myth.* New York, Charles Boni, 1929. 188 pp.

**CLAY, HENRY.** *The post-war unemployment problem.* London, Macmillan & Co. (Ltd.), 1929. 208 pp.; charts.

The author's thesis is that the post-war unemployment from which Great Britain suffers is different in kind as well as degree from the cyclical and seasonal depressions known in pre-war days, and that the measures of relief and prevention then deemed suitable are wholly inadequate now. Analyzing the more important features of the present depression, he points out that there is no hope that it will cure itself if left to time. Additional employment can be provided at once by expenditure on public works, but permanent relief can be obtained only by reducing costs of production in the basic industries. The reorganization of the depressed industries necessary to secure this end is not likely to be effected, he holds, unless the initiative is taken and the required impulse given by some agency outside them.

COLORADO AGRICULTURAL COLLEGE. Experiment Station. *Bulletin 353: Cost of producing crops on irrigated farms, by R. T. Burdick and H. B. Pingrey.* Fort Collins, 1929. 72 pp.; charts, illus.

Some of the cost data given in the bulletin are published in this issue of the Review.

CONGRESSO INTERNAZIONALE DI ORGANIZZAZIONE SCIENTIFICA DEL LAVORO, III<sup>o</sup>. *Atti. Rome, 1927. In two parts (3 vols.).*

Proceedings of the International Management Congress held in Rome in September, 1927.

COOM, CHARLES S. *Maximum wages the foundation of prosperity.* Boston, Meador Publishing Co., 1929. 226 pp.

HO, FRANKLIN L. AND FONG, HSIEN DING. *Extent and effects of industrialization in China.* Tientsin, Nankai University Committee on Social and Economic Research, 1929. 34 pp.

The authors regard this survey as highly tentative and serving merely as an introduction to future study.

KIRK, JOHN. *The economic aspects of native segregation in South Africa.* London, P. S. King & Son (Ltd.), 1929. 148 pp.

Reviewing the economic situation of the whites and the natives in South Africa, the author concludes that segregation, equitably administered, is a protection for the natives and an advantage for the whites. The work contains a brief discussion of the policies adopted.

KITSON, HARRY DEXTER. *How to find the right vocation.* New York, Harper & Bros., 1929. 202 pp.

Prepared as a guidebook, in nontechnical language, for those who must work out their own "vocational salvation" and also with a view to meeting the requirements of professional counselors and teachers who give courses in choosing a vocation.

LABOR RESEARCH DEPARTMENT. *Direct building: A study of building by direct labor under local authorities.* London, 1929. 74 pp.

A study of the methods used in the employment of direct labor by the local authorities in their effort to meet the housing situation, and of the advantages which the authors feel are inherent in the system.

LAIDLER, HARRY W. *Unemployment and its remedies.* New York, League for Industrial Democracy, 112 East 19th Street, 1929. 31 pp.

LYTLE, CHARLES WALTER. *Wage incentive methods—their selection, installation, and operation.* New York, Ronald Press Co., 1929. 457 pp.; charts.

MCMURRY, DONALD L. *Coxey's army. A study of the industrial army movement of 1894.* Boston, Little, Brown, & Co., 1929. 331 pp.

Tells the story of the crusades of the unemployed in the United States in the year following the financial crisis of 1893.

METROPOLITAN LIFE INSURANCE CO. Policyholders Service Bureau. *Sharing profits with employees.* New York [1929]. 29 pp.

Reviewed in this issue.

MÜLLER, EMIL. *Die Psychotechnische Rationalisierung der schweizerischen Wirtschaft.* Zurich, Jaques Bollman A. G., 1929. 101 pp.

Deals with the problem of psychotechnical rationalization in Swiss industries.

NATIONAL CHILD LABOR COMMITTEE. Publication No. 359: *Child labor in agriculture and farm life in the Arkansas Valley of Colorado (based upon studies made during summer, fall, and winter, 1924), by Bertram H. Mautner and others.* New York, 215 Fourth Avenue, 1929. 158 pp.; charts.

Reviewed in this issue.

NATIONAL SAFETY COUNCIL. *Industrial accident statistics [1928]. 1929 edition.*  
*Chicago, 108 East Ohio Street, 1929. 64 pp.; charts.*

Figures summarizing the accident experience of industrial establishments reporting to the National Safety Council, for the years 1926 to 1928, taken from the National Safety News for December, 1929, were published in the Labor Review for February, 1930.

NEW JERSEY INDUSTRIAL LENDERS' ASSOCIATION. *The small loan situation in New Jersey in 1929, by Willford Isbell King.* Trenton, 1929. 101 pp.; charts.

Reviewed in this issue.

NEW YORK (STATE) UNIVERSITY. *Bulletin No. 931: Introduction to the study of educational and occupational opportunity.* Albany, 1929. 46 pp.

An outline intended primarily for the use of pupils in grade 7 of the junior high school.

PARTINGTON, JOHN E. *Railroad purchasing and the business cycle.* Washington, Brookings Institution, 1929. 309 pp.; charts.

PEIXOTTO, JESSICA B. *How workers spend a living wage: A study of the incomes and expenditures of 82 typographers' families in San Francisco.* Berkeley, University of California Press, 1929. (University of California publications in economics, vol. 5, No. 3, pp. 161-245. Cost of living studies II.)

Certain parts of this study are reviewed in this issue.

PENNSYLVANIA STATE COLLEGE. School of Engineering. *Technical bulletin No. 6: Proceedings of the tenth annual industrial conference held at the Pennsylvania State College, May 16 to 18, 1929.* State College, 1929. 96 pp.

Among the papers presented at this conference were the following: Vocational counsel and placement at the University of Michigan; Industrial psychology in Europe and America; The trend in industrial training by extension methods; What changes are taking place in industry which will ultimately affect the demand for technically trained men?

PRINCETON UNIVERSITY. Industrial Relations Section. *The five-day week in industry; statements of fact and opinion.* Princeton, [1929?]. 28 pp.

— — — Mutual benefit associations. Princeton, 1929. 18 pp.

Reviewed in this issue.

RYAN, JOHN A. *Unemployment: What can be done about it?* Washington, National Catholic Welfare Conference, Social Action Department, 1929. 30 pp.

Reprints, with exception of two paragraphs, of four articles which appeared in the Commonwealth for October, 1929.

SCHULZ, H., and HARTMANN, OTTO R. *Das Angestelltenversicherungsgesetz nach dem Stande von Oktober, 1928.* Berlin, Reimar Hobbing, 1928. 138 pp.

Contains the social insurance law for salaried employees in Germany and its amendments and interpretations from 1924 to 1928.

TAYLOR, PAUL S. *Mexican labor in the United States: Racial school statistics, California, 1927.* Berkeley, University of California Press, 1929. (University of California publications in economics, vol. 6, No. 4, pp. 257-292.) Maps.

Records the distribution of Mexican, Negro, and Japanese children enrolled in the public and Catholic elementary schools of California, February 1, 1927.

WOKUREK, LUDWIG. *Das Arbeitsrecht der Čechoslovakischen Republik.* Brünn, Hauptverein deutscher Ingenieure in der Čechoslovakischen Republik, 1928. 405 pp.

Labor laws of Czechoslovakia, with interpretations.

